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ABSTRACT

The "Let's Be Amigos" bilingual education program seeks to meet the needs of both Spanish-speaking pupils living in the Philadelphia community and English-speaking pupils living in linguistically diverse neighborhoods. This document presents an evaluation of the three curriculum formats used in the program during the second year. The Model A program uses a team-teaching approach, in which an English-speaking and a Spanish-speaking teacher work with a pair of classes, each having English- and Spanish-speaking pupils. For language instruction in each language, the groups are homogeneous; the groups are mixed for joint activities. The Model B program, not fully implemented, makes use of itinerant, second language specialists working with homogeneous Latino and Anglo classes in second language instruction. Mother-tongue instruction is provided by native speakers. Ideally, both classes would participate in joint activities. In the Arriba program, pupils who have begun their education in a Spanish-speaking area and who need or wish to study in Spanish study science, mathematics, and social studies in Spanish and English as a second language in grades three through twelve. This report describes the objectives and procedures of each program and provides a detailed evaluation of each. For an evaluation of the first year, see ED 046 295. (VM)

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TITLE VII BILINGUAL PROJECT

LET'S BE AMIGOS

EVALUATION OF THE SECOND YEAR, 1970-1971

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INTRODUCTION AND SUMMARY OF THE LET'S BE AMIGOS SECOND-YEAR EVALUATION.

The Let's Be Amigos program is funded under Title VII, ESEA. It is a program of bilingual education which seeks to meet the needs of both Spanish-speaking pupils in the Philadelphia community and English-speaking pupils living in linguistically diverse neighborhoods. The Model A program at the Potter Thomas school meets these need through the development of a totally bilingual school. During the 1969-1970 school year, bilingual education was incorporated at the prekindergarten, kindergarten and first-grade levels. During the 1970-1971 school year it was extended to the second grade. In addition, an enriched all-day kindergarten program was established for alumni of the 1969-1970 pre-kindergarten program.

The Model B program, a new component added in 1970-1971, was designed to provide bilingual education to some Spanish-speaking, Latino pupils and some English-speaking, Anglo pupils in schools which could not be converted to totally bilingual schools. It is initiated at four sites, one with a kindergarten program and three with first grades. The principal of one school subsequently withdrew his school from the program because of disagreement with the philosophy of the program; however, Spanish-speaking teachers continued to provide service to the school children. Bethune, Ludlow, and Miller elementary schools were served by the Model B program for the entire year.

The ARRIBA program provided special instruction for children who were Spanish speaking, including many who were migrants to the mainland of the United States. At each operational level (upper elementary school, junior high school, and senior high school), grade-level appropriate coursework in English as a second language and four courses in Spanish (Spanish as a first language, science, mathematics and social studies) were offered. At the upper-elementary and junior high-school levels, pupils participating in the ARRIBA program studied all five of these subject areas. In the senior high school, ARRIBA pupils were free to select from among the course offerings those of the ARRIBA program which met their interests and needs. During 1970-1971, two additional high schools were added to the schools participating in this program.

This evaluation report examines the success of the project staff in implementing program plans, and the success of pupils in attaining the competencies specified in the program plans.

Procedures

Model A Procedures

The Model A program uses a team-teaching approach, in which an English-speaking and a Spanish-speaking teacher work with a pair of classes. Each class includes English and Spanish-speaking pupils. During various periods of the instructional day, the pupils work in linguistically homogeneous groups with the teacher who is a native speaker of their mother tongue for

instruction in their first language, with the teacher who is a native speaker of their second language for second language instruction, and in mixed groups for joint activities. The pupils at the entry levels of the program (prekindergarten, kindergarten, and first grade) begin with 90% of the instructional day in their mother tongue. As the children progress in the program, additional time is spent in instruction in the pupils' second language, until equal time is spent in each language.

Model B. This program attempts to use itinerant, second-language specialists to develop a miniature bilingual school program within a school which does not become totally bilingual. The original plan was for a pair of classes, one consisting of English-speaking pupils and one consisting of Spanish-speaking pupils would be designated as part of the program. Each class would receive instruction in the pupils' mother tongue from a teacher who was a native speaker of the pupils' language. Latino pupils would receive instruction, in most subject areas, similar to the program of the host school. Both groups would receive second-language instruction from itinerant instructors who were specialists in English and Spanish as second languages. Both would also participate in joint activities during parts of the day.

During 1970-1971, the program was started by getting operational classes for Latino pupils, but the English component was not fully operational. Thus, the Spanish as a second language instruction for Anglos was informal, and the direct coupling of Anglo and Latino classes was absent.

During the school year, the principals of the schools with first-grade Model B classes asked that half the school day be English instruction. This resulted in Model B Latino first graders being exposed to more English than similar pupils in Model A.

ARRIBA. This program is for pupils who have begun their education in a Spanish-speaking area and need to study, or are interested in studying, in Spanish. In grades three through twelve, five major subject areas are offered: English as a second language, science, mathematics, social studies in Spanish, and Spanish as a second language. At the elementary school and junior high school levles, all pupils enrolled in the program study the full five major subject package. At the senior high level, pupils are free to elect the courses they wish. The roster includes English as a second language, Spanish as a second language, Biology, Chemistry, Algebra, American History I and II, and History of Puerto Rico. All Spanish language classes are taught by native Spanish-speaking faculty. English as a second language is taught by bilingual staff where possible.

Evaluation

A wide variety of measures and analyses were used in the evaluation of the three components. In Model A and B the approach has been "criterion-referent", in that the items of many measures have one-to-one relationships with the contents of the program. Where suitable baselines exist, comparison

of the participants with pre-program data is made.

In the ARRIBA program, emphasis was on a number of correlates with school achievement (attendance, grade, deportment) without formal measurement of academic performance itself. The evaluation of this component also includes exploration of pupil performance on criterion tests developed with exercises in the program and pupil evaluation of the program contents.

In addition, the evaluation also includes perceptions of the program by principals, parents and ARRIBA component pupils.

Process evaluation has been carried out through monitoring and through collection of informal, reported data. The primary source of this information was the forms which supervisors completed when they visited classes. These were supplemented by interviews with project staff and informal observations, primarily conducted by the research assistant in his visits to various sites.

Results

Model A and B

. Examination of pupil performance on the micro-objective level indicated that pupils were generally functioning at anticipated levels in their first language. In other curricular areas, (number concepts, second language, science, and mathematics) results varied from grade level to grade level with pupil mastery of second-language enrichment in these areas an important factor in overall performance. When pupil performance of 1969-1970 was compared with that of 1970-1971 on micro-objectives common to the two years, it was found that the 1970-1971 performance was better. This was probably accounted for by the later date that pupils were observed.

. The micro-objective data indicated that pupils who had done good work in the prekindergarten and were subsequently enrolled in a special all-day kindergarten program performed at or close to anticipated levels in all curricular areas.

. Pupils in the all-day kindergarten also began to read at the preprimer level in their mother tongue. This achievement is beyond that anticipated in the proposal.

. Performance of Latino pupils in the Model B program equalled or exceeded that of Model A participants on the micro-objectives and readiness tests.

. Results of Prekindergarten pupil performance on the prekindergarten readiness test were the same as those found during the previous year, suggesting that there was an adequate pool of pupils for an all-day kindergarten.

. Performance of Anglos on the Philadelphia Readiness test was about the same as the previous year for Anglo pupils, who met the criteria of the objective. Latino performance fell to below the Potter-Thomas 1968 baseline criterion. Pupil performance of the Model B Latinos, however, was superior.

. Criterion reference reading tests emphasizing word-calling skills indicated that typical pupils were reading in their mother tongues at anticipated levels, but the spread was wide. Of special concern was the fact that many pupils were reading at low levels. Sullivan Programmed Reading materials were introduced in a class of second grade Anglos who were having difficulty learning to read. The pupil performance on these materials was poorer than had been anticipated.

. Criterion Reference Reading tests, which attempted to measure more complex skills than word calling, were developed and tried. The tests were found to be inconsistent, suggesting problems in their construction or administration.

. Performance of Anglo second-grade pupils on reading subtests of the Stanford Achievement tests was better than that of a preprogram baseline group, suggesting that, despite the presence of problems, the reading program for Anglos was better than one it replaced.

. Performance of both Anglo and Latino first-grade pupils on writing skill tests was satisfactory at about the levels anticipated by the program planners in Model A, but below anticipated levels in Model B.

. Test of arithmetic skills in the second grade showed that the typical Anglo pupil was working at the level stated in the objective; however, the spread was great, with more pupils than anticipated scoring very highly and very low. Latino pupils performed better than required by the objective.

Despite problems in getting the program started, Latino pupils in Model B outperformed those of Model A on most measures which were analyzed to distinguish between the programs.

ARRIBA

. Comparison of elementary-grade ARRIBA participants with a baseline group of Spanish-speaking pupils in the schools in the fiscal year 1968-1969 showed that pupils in the program had significantly better grades and attendance. There were also trends for pupils to have better ratings for deportment and work habits.

. Comparison of junior high-school ARRIBA participants with the 1968-1969 baseline group indicated that pupils in the program had better grades, work habits and deportment ratings. In the junior high school attendance was not affected.

. Comparison of high-school ARRIBA program participants with the 1968-1969 baseline group showed that students in the program obtained better grades in those courses which were part of the program. There was a trend for pupils to receive better "behavior" ratings than participants in the baseline group. No difference were found in grades and behavior ratings earned in regular English-language courses, in attendance or in lateness data.

. Comparison of dropout incidences in 1969-1969 and in the current year, showed that the ARRIBA program reduced the numbers of pupils leaving school in the tenth and eleventh grades.

. Survey of principals, parents and pupils showed that there was broad-based support of the program, but some specific problems were raised, especially by pupils and principals.

In addition to the performance and perception of pupils in attaining the program goals, this, the 1970-1971 evaluation examines the staff's success in implementing the program and curriculum development and implementation. These are supplemented with a study examining the validity of a speaking test as a tool for rating Latino elementary school pupils' readiness for learning to read English and a study examining the retention of reading skills during the summer hiatus.

Audit trail and budget records supplied by the Accounting Department and the Director permitted the accounting of most of the expenditures of grant funds. These are shown on Table 1. The table also includes the Project Director's estimate of the value of the contributions of staff, supervision, and materials contributed by the school district from other funds. The total cost per pupil is $724.24, of which $353.37 came from Title VII.

Program Operating Costs
Table 1

Title VII Contributions	
Salaries for staff (including $55,000 encumbered by retroactive increases mandated for teacher/ curriculum developers by union contract)	$ 411,818.00
Overtime staff development	9,362.15
Overtime for Curriculum Materials development	31,175.38
Books and supplies	23,640.93
Title VII Contribution, Subtotal	475,996.46
Estimated value of School District contributions of materials and Services (Project Director's Estimate)	500,000.00
Total Program Cost	975,996.46
Pupils Served	1,347
Total Cost per pupil	724.58
Cost per pupil from Title VII funds	353.37

Discussion

This report focused on the formative evaluation of Models A and B. The results show that the programs have attained their objectives most consistently in the area of the pupils' mother tongues, with results in other curricular areas sometimes at or above expected levels, and sometimes below expected levels. It should be noted that these "expected" levels represent the project developer's beliefs about what children should know. Where the program has attempted to compare pupil performance with a pre-program (Anglo's reading English) baseline, the results showed the program improved skills.

In the third year of program operation, some parts of program operation have reached the development stage, where summative evaluation, similar to study of Anglo reading skills, should be undertaken.

ARRIBA

The evaluation of this component shows, for the second year in a row, that the program is effective in improving pupils grades and classroom behavior as rated by teachers. Elementary-school attendance and high-school dropout incidence also have been improved. As curricular units have been readied for classroom use, evaluation emphasis in this program should focus more on formal observation of pupil mastery of the program contents than it has in the past.

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STUDY 1. PROCESS EVALUATION OF THE LET'S BE AMIGOS PROGRAM

The process evaluation of the first year of the Let's Be Amigos program examined the performance of the staff in carrying out the enabling objectives of the program in two studies (Offenberg 1970, p. 1 and p. 100). One focused on the major enabling objectives and supportive procedures of Model A program, the other on the enabling objectives of the ARRIBA program. The major conclusion drawn in this evaluation of the first year was that the program was implemented in a manner consistent with that specified in the proposal document with only minor exceptions. The one important discrepancy between proposal and program was that the amount of second-language contact in the model school was less than had been anticipated.

This year's process evaluation considered most of the same process and enabling objectives. It also included examination of enabling objectives tied to the implementation of the second grade at Potter-Thomas and the implementation in four schools of Model B, an alternative primary level bilingual program.

Some of the process-evaluation data were presented (at the request of the Office of Education) as part of the Continuation Proposal for 1971-1972. The data which were presented in this continuation proposal are summarized briefly in this report.

Enabling Objectives and Supportive Procedures, Model School Programs

1. Enabling Objectives 1.1-6a (Curriculum Implementation, Prekindergarten), 2.1-6a (Curriculum Implementation, Kindergarten), and 3.1-6a (Curriculum Implementation, First Grade) all specified that program supervisors would review lesson plans and logs, and would monitor classes in order to assure that the program specified in the program guide for each level was taking place in the classroom.

2. Enabling Objectives 1.1-6b (First- and Second-Language Distribution in the Prekindergarten), 2.1-6b (First- and Second-Language Distribution in the Kindergarten, and 3.1-6b (First- and Second-Language Distribution for the First Grade) all specified that the amount of classroom time devoted to instruction in the second language would rise from 10% in September and October to 40-50% by the end of the school year.

3. Enabling Objective 3.7 (First-Grade Reading and Writing Programs) stated that, in addition to reading readiness and writing activities specified in the program guide, the first-grade students would begin to use the Bank Street pre-primer and primer if they were English-speaking and the Laidlaw Por el Mundo del Cuento y la Aventura pre-primer and primer if they were Spanish-speaking. These readers were to serve as the source of material for writing as well as for reading.

4. Supportive Procedure 4.1 (Assembly Programs) stated that all model school pupils would participate in at least one assembly program that reflected Anglo cultural heritage and one similar assembly program that reflected Latino cultural heritage.

5. Supportive Procedure 4.2 (Music Contents) stated that all students would practice singing at least two English songs and two Spanish songs.

6. Supportive Procedure 4.3 (Games) stated that two English and two Spanish games would be taught to all students during a recreation period.

7. Supportive Procedure 4.6 (Puerto Rican Culture and Community Resources Program) stated that bimonthly staff development programs would be held for all teachers in the model program, in order to acquaint them with selected topics in teaching methods which would enable them to capitalize on community resources.

8. Enabling Objective 5.1 (Reading in the First Language) stated that teachers in the second grade of the Model A School program would review contents of the first-grade reading program, test pupils on the reading tests used during the first year of program operation, and then assign them to the appropriate level of the Bank Street and Laidlaw readers. Following the grouping, teachers would follow recommended teaching practices specified by the supervisors of the program.

9. Enabling Objective 5.2 (Poetry in the First and Second Languages) stated that second-grade teachers would read at least one poem per week to their classes and that at least six poems would be memorized by the second-grade pupils (three in their mother tongue, three in their second language).

10. Enabling Objective 5.3 (Writing in the First Language, Second Grade) stated that the second-grade teacher would engage in the following activities: (a) Having the children dictate stories to the teacher for writing on the blackboard and then copy what the teacher has written; (b) following mastery of this activity, having pupils complete stories begun by the teacher, and (c) eventually, having pupils write their own stories, when all words to be used in the story are written on the blackboard.

11. Enabling Objective 5.4 (Spanish as a Second Language, Second Grade) stated that Spanish skills would be taught to second-grade Anglo pupils using Hablan Los Ninos materials. They would be supplemented with the Classic Fairy Tales filmstrips, which were put into Spanish for use in the project. A guide for the teaching of the second language, prepared by project staff, would be available for teachers by September 1.

12. Enabling Objective 5.5 (English as a Second Language, Second Grade) stated that teachers would develop the English language skills of Latino pupils through using the textbooks Introducing English and Getting Ready to Read.

13. Enabling Objective 5.6 (Social Studies in the First Language) stated that the second-grade teachers would focus on two major topics, Living in the Neighborhood and American and Puerto Rican Culture. These topics would be based on course outlines to be completed by September 1971.

14. Enabling Objective 5.7 (Science in the First Language in the Second Grade) stated that teachers would carry out the activities in the following Webster Science Series units: Growing Seeds, Life of Peas and Beans, Clay Boats, Balancing, Mobiles, Materials, Changes, Light and Shadows, and Brine Shrimp.

15. Enabling Objective 5.8 (Mathematics in the First Language in the Second Grade) stated that teachers would review the contents of the mathematics program of the first grade, then regroup their children. Pupils would then work with SRA mathematics materials.

16. Enabling Objective 5.9 (Second-Language Mathematics in the Second Grade) stated that second-grade teachers would present number concepts to the pupils in their second language after introducing them in the mother tongue.

17. Enabling Objective 5.10 (Health in the First Language) stated that teachers would introduce three units: Personal Grooming, Safety in the School, Home and Community, and Dressing According to the Activity and Weather. These units were to be developed by program supervisors during the summer of 1970. All teachers were also to provide a "Good Grooming" area in the classroom to be used by the children.

Enabling Objectives of the ARRIBA Program

1. Teacher Selection. Teachers selected for this program would all be native speakers of Spanish, with 12 credits in teaching methods, and would have passed the screening of a committee consisting of representatives from the Spanish-speaking community, the Foreign Lanaguages Department of the School District of Philadelphia, and the Temple University College of Education.

2. Spanish Instruction. All courses will be carried out in the Spanish language, except English as a Second Language (ESL).

3. English Curriculum. All students would be enrolled in an English curriculum (ESL or regular English course appropriate to their grade level).

4. Puerto Rican History and Culture. A unit on this topic would be included in the social studies curriculum.

5. Parent Program. Parents would participate in at least one function at each school site which would be carried out in both Spanish and English languages.

6. Staff Development - Preservice. All new teachers would enroll in a special teacher-preparation program for bilingual teachers leading to a bachelor's or master's degree at Temple University and to emergency certification to teach in Pennsylvania.

7. In-Service Training. All teachers with emergency certificates would participate in an in-service training program sponsored by

the School District of Philadelphia and Temple University, and earn at least a C grade in the Seminar on Teaching.

8. Curriculum Implementation. At each level of the ARRIBA Program the amendment to the proposal for 1970-1971 specified an objective which stated that teachers would carry out the activities in the curricular units developed for the grade level and literacy level of the pupils in the program.

Procedures

Program Procedures

Model A. The Model A program continued to operate at the Potter-Thomas School site, where it encompassed prekindergarten through second-grade levels. The two half-day prekindergarten classes, the four half-day kindergarten classes, and four first-grade classes initiated during the first year of operation were maintained. To these classes were added an all-day kindergarten class, which introduced reading, and four second-grade classes. The addition of the second-grade level resulted in the development of some new process or enabling objectives.

The Model A program continued to be taught in the same format as in the previous year, with teams of Anglo and Latino teachers manning double-size classes. Each teacher was responsible for teaching in her mother tongue during the school day. Pupils in the classes were divided into ethnically homogeneous or ethnically mixed groups, depending on the activities in which they were engaged.

Model B. This program attempted to provide an alternative plan for teaching pupils bilingually without total reorganization of the school. At Ludlow, McKinley, and Miller elementary schools a first-grade program was begun. At Wright-Bethune a kindergarten program was initiated.

The original plan was for an English-speaking teacher and a Spanish-speaking teacher to work with two classes in their respective mother tongues. Itinerant second-language specialists were to provide ESL instruction to Latino pupils, SSL instruction to Anglos.

Model B was not implemented in accordance with this plan. The McKinley school principal withdrew his school from the program because he did not feel that the Model B program suited the needs of his school. Bilingual teachers remained on the school staff, but were not obligated to carry out the program specified in the Let's Be Amigos proposals. At the three other schools, Latino pupils received instruction in accordance with the program guidelines and objectives, but the Anglo pupils did not participate fully. Second-language specialists taught Spanish as a Second Language (SSL) to some Anglo pupils but there was no commitment to follow program objectives and no comprehensive evaluation of pupil performance.

ARRIBA. This program continued to offer Spanish language study for

curricular areas of science, mathematics, social studies, and SSL for pupils in grades three through twelve. The program also offered ESL study.

The ARRIBA program expanded in 1970-1971. At the high school level two new schools were brought into the program, Benjamin Franklin and William Penn. At other sites (Edison and Kensington high schools, Stoddart-Fleisher and Penn Treaty junior high schools and Ludlow and Waring elementary schools) the program remained essentially the same, but some additions and modifications were made in terms of personnel.

At Edison and Kensington high schools, additional subjects, such as chemistry and higher level Spanish courses, were added.

Evaluation Procedures

The process evaluation of the Let's Be Amigos program rested on a wide variety of data. Monitoring of classes by the research staff and program supervisors constituted one major source of information. Where necessary, the supervisor's written records of monitoring were supplemented by evaluator-supervisor discussion of the current status of the program. A second major source of data was the record of pupil participants produced by the Bilingual Pupil Information File, a computerized record of pupil participation in the program. Lastly, copies of minutes of meetings, programs presented, etc., were submitted to the evaluator, in order that a record of these activities could be included in this report. Data from these sources were integrated by the evaluation staff and then applied to the objectives.

Results

Model A and Model B Programs

By May 1971, 627 pupils had received instruction in the Model A program, and 157 had received instruction in the Model B program.

Process-evaluation data indicated that those in Model A were receiving instruction which was generally consistent with the project guidelines. Those pupils enrolled in the Model B program at the three sites where the program was operating were receiving instruction which was consistent with the enabling objectives of the program, so far as was possible given the modifications of the program indicated in the "procedures" section above.

Enabling Objectives 1.1-6a, and 3.1-6a all stated that pre-kindergarten, kindergarten, and first-grade classes would be monitored so that program supervisors could (a) assure that the program being implemented was consistent with the proposal and (b) offer assistance to teachers when help was needed. Although no process objective specifically stated that the second-grade program in Model A would be observed, the proposal document implied that these classes were to be monitored as well. One hundred sixty-four class observations were reported by supervisors between the

opening of school and May; 141 visits were made to the 12 teams of the Model A program, and 23 visits were made to the Model B classes. All but one of the Model B observations were carried out at the three schools where the program was operational. Thus, the typical teaching team was visited 10.2 times per year, or slightly more than once per month. With the exception of one teacher, who had serious difficulty in class control, the supervisors' reports were favorable. They showed that the program was being implemented in accordance with the proposal document.

Enabling Objectives 1.1-6b, 2.1-6b and 3.1-6b all stated that pupil contact with the second language would rise from 10% of the time at the beginning of the year to 50% of the time by year end. Last year, these levels were not reached. Supervisors' reports indicate that during the current year, 1970-1971, second-language contact time was about 20% in the prekindergarten program, about 20% in the regular kindergarten, and about 30% in the all-day kindergarten and first-grade classes. In the second grade, one teaching team reached 30% second-language contact time. The other team reached 50% contact time. This latter team introduced its pupils to reading in the second language at midyear.

Enabling Objective 3.7 stated that reading would be introduced in the first-grade classes using Bank Street for Anglo pupils, and Laidlaw for Spanish pupils. This enabling objective was implemented as specified.

There was also an introduction of some reading skills in the all-day kindergarten program of Model A, although this was not required by any objective.

Supportive Procedure 4.1 stated that assembly programs reflecting the cultural heritage of Anglos and Latinos would be held at each site. Supervisors reported that assembly programs including both English and Spanish elements were presented at Christmas and Mother's Day to all operating Model A and Model B sites, except Bethune school.

Supportive Procedure 4.2 stated that children in the model schools would be introduced to singing at least two songs in English and Spanish. According to supervisors' reports, more than two were introduced in each class.

Supportive Procedure 4.3 stated that games in each language would be introduced. Program supervisors indicated that such an introduction occurred in every class.

Supportive Procedure 4.6 stated that bimonthly staff meetings would be held, to acquaint teachers with community resources and teaching methods. The supervisors reported that at the Model A school, time was set aside at regular staff meetings for teachers to work together on these problems. In the Model B program, these problems were dealt with in individual supervisor-teacher conferences.

Enabling Objective 5.1 stated that teachers in the second-grade classes would continue to teach pupils to read in their mother tongue, using the Laidlaw series for Latinos, Bank Street for Anglos. At the

beginning of the year, it was felt that Anglo pupils in the second grade who had difficulty learning to read might be helped through the use of the Sullivan programmed reading materials. These materials were substituted for Bank Street in the second-grade class (see Study 5). Apart from this materials change, the program was carried out as specified in the objective.

Enabling Objective 5.2 stated that the children in the second grade were to be read a poem a week, one half of the poems to be in Spanish, one half to be in English. The pupils were then to learn to recite at least three poems in English and three in Spanish. The supervisors indicated (without an exact count) that fewer poems were introduced than specified but that each teacher did have her class memorize the required number of poems in each language.

Enabling Objective 5.3 described the skills which second-grade pupils were to master in writing (manuscript) in their first language. Teachers and supervisors' observations indicated that this enabling objective underestimated the ultimate level of pupil performance. The terminal activity in the objective stated that pupils would be able to write stories when all the necessary words were written on the blackboard beforehand. The pupils were able to carry out this activity by midyear. By year-end teachers had taught pupils to write stories without the aid of vocabulary being written on the blackboard. This situation made the assessment of Performance Objective 5.3 of limited value. When time constraints made it necessary to simplify the evaluation procedures, it was felt that collection of these data could be dropped. However, teachers submitted copies of original stories written by the pupils in the second grade, to assure that pupils could write them as the teachers had claimed.

Enabling Objective 5.4 stated that second-grade Anglo pupils would be taught Spanish as a second language following the Hablan Los Ninos materials. During the year Hablemos, a locally developed course of study, was developed. It was substituted for the Hablan Los Ninos text, which was then used as a supplement.

Classic Fairy Tales, a supplemental materials package, was being completed for use in the program. However, it still was incomplete at year-end. Therefore, only the completed parts were used.

In addition to this course of study, one class, consisting of about half the Anglo pupils in the second grade, began to learn to read in Spanish. Laidlaw, the regular Spanish-language reading text of the program was used as the basic material for introducing this second skill (see Study 5).

Enabling Objective 5.5 stated that second-grade teachers would use Introducing English and Getting Ready to Read as the major texts for teaching Latino pupils English. During the school year Introducing English was used, but Miami Linguistics materials were substituted for Getting Ready to Read. One second-grade team (which included about half the Latino pupils) began formal instruction in reading in English at about midyear. Teachers used the Bank Street reading series with this class (see Study 5).

Enabling Objective 5.6 stated that two social studies units, one on "Living in the Neighborhood" and one on "American and Puerto Rican Culture," would be developed (each in English and Spanish versions) for use in the second grade of the program. The teachers were to develop the units from outlines provided by the supervisors. The supervisors reported that the outlines were produced. Teachers built their lessons around these outlines. However, they did not prepare packaged units which could be used by other teachers.

Enabling Objective 5.7 described the minimum activities which were to make up the science curriculum for the second grade. Teacher reports indicated that five units were actually taught (compared with eight in the objective). Moreover, the selected units taught were different from those specified in the proposal. Only one of the Webster units, Brine Shrimp, was used. The others used were from SCIS (Heath & Co.) series: Plants, Animals, Microscope, and Weather. In addition, each team set up an aquarium for pupil observation during the year.

Enabling Objective 5.8 described the mathematics to be taught in the pupils' first language in the second grade. Anglo pupils were to use the SRA mathematics series in English. Latino pupils were to use a teacher-made translation of these materials. According to teachers and supervisors this subject matter was taught as planned.

Enabling Objective 5.9 stated that second-grade mathematics skills would be taught in the second language (as well as the first) with use of the second language occupying half of the instructional time in this subject by the end of the year. According to the program supervisors' observations, the teachers were carrying out the activities according to the plan specified in this objective.

Enabling Objective 5.10 stated that three health concepts units would be outlined by the supervisors and built into units during the summer of 1970. According to the supervisors' reports, outlines were developed during the early part of the school year. The teachers then developed the outlines into courses of study which they implemented in the classroom but they did not prepare formal units for use by other teachers.

ARRIBA Program

By May, 1971, 563 pupils had received instruction in the ARRIBA program component. Between September and May classes had been formally monitored 34 times, but the supervisor of the program indicated that there frequently were other visits to the schools and classes which did not involve monitoring. Problems observed and handled as part of this monitoring process and these visits were described on page 37 of the 1971-1972 Continuation Proposal. Problems included the manner of the classroom presentations of materials, overcrowding at two schools, and the need to select and try out new materials. Six meetings (three attended only by teachers specializing in one or two curricular areas and three programwide) were held in which these problems were given attention.

Apart from these specific problems, the program was generally operated within the guidelines indicated by the ARRIBA program's enabling objectives.

Enabling Objective: Teacher Selection. This objective stated that all teachers in the ARRIBA program would have 12 education credits and would have passed the criteria of the screening committee. These requirements could be met through summer institutes held jointly by Temple University and the School District of Philadelphia. During 1970-1971 27 teachers (including those teaching English as a Second Language at schools where Title VII programs were operating) were working in the program. Of these, 22 had been obtained through the institute selection and preparation process, and therefore, met these requirements. The other five were teachers in the ARRIBA program who had regular university training, and therefore exceeded the minimum educational requirements, but had not been passed on by the selection board. All but one of these five were native speakers of Spanish or were very fluent in that language. Only one of these teachers (a native speaker of Spanish) was directly involved in the ARRIBA program classes. All the others were teachers of English as a Second Language.

Enabling Objective: Spanish Instruction stated that coursework in all subjects (except English as a Second Language) would be conducted in Spanish. In mathematics and science, technical vocabulary in English would also be introduced. The program supervisor's observations indicated that all course were conducted in Spanish and that English was introduced where appropriate.

Enabling Objective: English Curriculum stated that all ARRIBA pupils would be enrolled in English as a Second Language. Data collected through the Project Pupil Information System indicated that this was true for all pupils at the elementary and junior high school levels. At the high school level, pupils were free to select (with the advice of their counselors) those courses of the ARRIBA program they wished. According to data in the Pupil Information System, 120 of the 256 high school pupils (47%) were enrolled in ESL. Others were enrolled in regular English classes.

Enabling Objective: Puerto Rican History and Culture stated that each social studies or history course would include a unit on this topic. According to information provided by the ARRIBA program supervisor, this was the case in all social studies courses. Generally, the unit was taken up as the first topic at the beginning of the school year.

Enabling Objective: Parent Program stated that one program for parents would be held at each school site. Five parents' meetings were held, which provided an opportunity for parents of pupils of all schools in the program to participate. The largest was attended by 300 parents and included parents from each school in the project. Thus, while there was not a meeting at each school site, there was an opportunity for all parents to have contact with project personnel.

In addition to these meetings, four booklets for parents were

published in order to provide information about the program for parents.

Enabling Objective: Staff Development stated that all new teachers would enroll in a special teacher preparation program operated by Temple University and the School District. A preservice program was held in which 41 native Spanish speakers were trained. All but one teacher successfully completed the summer program. Seventeen were subsequently employed in the Let's Be Amigos program: nine in the ARRIBA program, four in Model A, and four in Model B.

Enabling Objective: In-service Training stated that as of June all teachers with emergency certification in ARRIBA (and all in the Model School Program as well) were reported by Temple University as doing satisfactory work toward completing the requirements for regular certification (two teachers who had not taken the minimum number of credits, were enrolled for summer courses to make them up).

Of the 40 teachers who completed the 1970 Summer institute all but three completed one year of teaching. One teacher assigned to the ARRIBA program was dropped because of poor performance in the program; one teacher dropped out of the program before being given a class assignment; and one dropped from the program during the school year for personal reasons.

Enabling Objectives: Curriculum Implementation stated that the bilingual teachers would try out curriculum materials developed for use in the program. As shown in Study 11, most materials were not completed early enough in the year for them to be used with pupils. Thus, except for one set of English as a Second Language materials and three science units, teachers had to develop their own lessons, materials and translations of existing texts. As much material has been completed and is ready for printing, it is anticipated that systematic materials tryout will be provided next year (1971-1972).

Other Process-Evaluation Data

In addition to the data on program implementation specified by the enabling objectives, there were wide varieties of activities in each of the program components worthy of note. These were presented in detail in the 1971-1972 Continuation Proposal, but are summarized here. Pupils and staff of the Model A and B programs participated in extracurricular activities, which included participation in a Puerto Rican Day parade, a musical presentation, holiday programs, a covered-dish luncheon and an after-school program to give academic help to pupils needing it. ARRIBA pupils and staff participated in a total of 34 cultural activities (parade, musical presentations, trips, dances, etc.). Eight after-school clubs were operated for bilingual pupils. Faculty and staff have been serving in leadership positions in nine community service organizations. A professional association, the Association of Bilingual Teachers, was formed. The 1970 evaluation report was published through ERIC, and a paper was presented to the American Psychological Convention.

Discussion and Conclusions

Overall, the program appears to have been implemented in a manner consonant with the guidelines of the proposal. One source of discrepancy between the proposal and the program was in the start of the new second-grade level of the Model A program. Here changes were made in the text and materials to improve the program's functioning as it was put into effect. They seem to have been appropriate.

In the Model B program, there was a need to make serious changes in the original plan in order to get programs started in four new schools. The most serious problem was the inability to secure an agreement in principle to operate a program at the McKinley School in a manner consistent with the proposal. The next most serious problem appears to have been the inability to obtain Anglo classes which were coupled to Latino classes in true team situations at the three other Model B sites.

In the program as a whole, there was difficulty in completing the development of materials in time for their use with pupils.

These problems appear to have two causes. First, labor negotiations which resulted in delayed opening of school and brief closing of the schools in October disrupted the curriculum development process during the summer and fall of 1970. Secondly, the curriculum-development process proved to be more difficult for the personnel involved than had been anticipated. Thus, there was a need for the project director and supervisors to work on upgrading the curriculum-development skills of the writing teams as well as developing the curriculum materials. It is anticipated that these problems will not recur, and that curriculum development in the coming year will be more efficient.

In conclusion, it appears that each of the departures from the program as it was specified in the process objectives of the proposal seems to have been in response by project management to situations existing in the milieu in which the project had to operate. The project staff appears to have made an adjustment which was appropriate under those conditions, sacrificing some short-term attainments to enable the project to achieve its long-range goals. This kind of exchange appears valid in terms of the long-range goals of Title VII.

STUDY 2. LOG OF STUDENT PERFORMANCE IN THE MODEL A AND MODEL B SCHOOL PROGRAMS

The Model School program's outcomes were specified in two ways. The first was a broad-based statement of each objective in which observation method and criteria were specified. The second was a list of highly specific performance, or micro-objectives, clusters of which formed the objectives. This study examined the performance of pupils, as observed by teachers in the classroom, on the level of the micro-objectives. It was carried out for two distinct reasons. By asking teachers to systematically check and record students' behavior, a very broad-based although subjective) measure of student performance could be obtained. By having teachers keep the record, it was felt that each teacher's attention would be drawn to objectives the students in her class could not perform. Thus, the log served both a product-evaluation and a process-evaluation function.

During the 1970-1971 school year, several changes were made in the data collection process for the study of micro-objectives, which were designed to improve the quality of the data gathered and make the gathering more efficient. During 1969-1970 only year-end data were available, because pupil performances on micro-objectives were recorded in a manner which required hand tallying. This year, through the use of a digitek record keeping system and time-sampling of pupil performance, data were available for assessing both mid-year and year-end performance.

During the first year of operation objectives had to be prorated, as the last data were collected several weeks before year-end. This problem made it necessary to adjust the criterion levels for all micro-objectives in the program. This year, the use of time samples of one-third of the pupil groups at each observation period permitted collection of the year-end data within two weeks of the close of school, eliminating the need for proration.

The expansion of the model school program during the 1970-1971 resulted in two important changes which affected this evaluation: As noted in Study 1, (two with first grades and one with a kindergarten) began to offer evaluatable bilingual programs as part of Model B. The Model A, or Potter-Thomas School Program, expanded to include two new grade levels: an all-day kindergarten for superior pupils with prekindergarten experience, and a second grade which was a part of the upward cycling of regular model school programs.

The Model B programs this year had full participation of Latino pupils, with Anglo pupils participating only marginally. The new second-grade level at the Model A site was a full bilingual program with both Anglo and Latino pupils participating.

Objectives

Performance Objective 1.1 - Communication skills in the first language in the prekindergarten program (English or Spanish). Ninety percent of the students in the prekindergarten program would be able to carry out

each of the skills specified in the prekindergarten guide for the first language.

Performance Objective 1.2 - Communication skills in the second language in the prekindergarten program (Spanish or English). Ninety percent of the Latino students in the prekindergarten program would perform each of the skills specified in the prekindergarten program guide for the second language. Anglo pupils would be able to perform 80% of the indicated skills.

Performance Objective 1.3 - Development of number concepts in the prekindergarten. Specific number skills were to be learned, some by 90% of the students, others by at least 60% of the students. In the presentation of the data, the correct percentage would be indicated.

Performance Objective 1.4 - Natural and biological phenomena within the perceptual grasp of the prekindergarten program student. About 60% of the students would carry out 80% of the science activities specified in the prekindergarten program guide, for an overall minimum of about 48% satisfactory performance on each skill.

Performance Objective 2.1 - Growth of communication skills in the first language in the kindergarten program (English or Spanish). Ninety percent of the students in the kindergarten program would be able to carry out each of the specific communication skills indicated in the kindergarten program guide for the first language.

Performance Objective 2.2 - Growth of communication skills in the second language in the kindergarten program (Spanish or English). Ninety percent of the Latino students in the kindergarten program would be able to carry out the specific skills specified in the kindergarten program guide for the second language. Eighty percent of the Anglos would be able to carry out these skills.

Performance Objective 2.3 - Development of number concepts in the kindergarten. Ninety percent of the students would be able to perform the number skills specified in the kindergarten guide.

Performance Objective 2.4 - Natural and biological phenomena in the grasp of the kindergarten pupil. Ninety percent of the students in the kindergarten would perform each of the skills specified in the science section of the kindergarten program guide.

Performance Objectives 2.1* - 4*. In addition to the regular kindergarten class, there was an all-day kindergarten class at the Potter-Thomas School for participants in the previous year's prekindergarten program. The criteria for each objective of this class were the same as for the regular kindergarten, even though the contents in each objective were more difficult. In the ensuing discussion and in the charts, the all-day kindergarten data will be distinguished from the regular kindergarten by an asterisk.

Performance Objective 3.1 - Growth of communication skills in the students' first language in the first grade (English or Spanish). Ninety percent of the students would be able to perform each activity in the first-grade program guide for the first language.

Performance Objective 3.2 - Growth of communication skills in the student's second language in the first grade (Spanish or English). Ninety percent of the Latino students would be able to perform each of the activities specified in the first-grade guide for the second language. Eighty percent of the Anglos would be able to perform then.

Performance Objective 3.3 - Development of number concepts in the first grade. Ninety percent of the students would be able to carry out the number skills specified in the first-grade program guide.

Performance Objective 3.4 - Natural and biological phenomena in the first grade. Eighty percent of the students would be able to carry out each of the science activities specified in the first-grade program guide.

Performance Objective 3.7 - Reading and writing. Ninety percent of the students would be able to carry out each of the specified reading and writing activities in their mother tongue (as well as begin to use the reader series in their mother tongue). Additional items were added for the second language. They did not carry any performance criterion.

Performance Objective 5.1 - Reading in the first language in the second grade (English or Spanish). It was anticipated that this objective would be measured through a battery of reading tests which are presented in Study No. 5. Therefore, a satisfactory performance level for micro-objectives was not established. The performance of pupils will, therefore, be presented but no comparison with a criterion will be made.

Performance Objective 5.2 - Poetry (first and second language). At least 75% of the students would be able to recite at least half of three poems in their mother tongue and three poems in their second language by the end of the year.

Performance Objective 5.3 - Writing in the first language. Several micro-objectives appeared in the second grade which pertained to writing in the first language. No specific criterion appears in the proposal. During the school year the program staff indicated that average performance of 85% of the pupils attaining these micro-objectives was satisfactory, and Objective 5.3 also specified that writing would be examined through a test. This examination was dropped.

Performance Objective 5.4 - Spanish as a second language (Anglo students only). An average of 80% of the students would be able to perform the activities specified in the second-grade program for the second language.

Performance Objective 5.5 - English as a second language (Latino students only). An average of 90% of the students would be able to perform the activities specified in the second-grade program guide for the second language.

Performance Objective 5.6 - Social Studies in the first language. An average of 90% of the students would correctly respond to the items in the second-grade program guide for social studies.

Performance Objective 5.7 - Science in the first language. An average of 90% of the students in the second-grade program would be able to carry out the science activities listed in the second-grade program guide for science in the first language.

Performance Objective 5.8 - Mathematics. A brief test was developed from materials included in the texts which was used to examine the final outcome of the mathematics objective. The results are presented in Study 8. In addition, it was expected that an average of 90% of the students would be able to carry out the number skills specified in the second-grade program guide.

In addition to these product objectives, the program has specified an enabling objective for each grade level, stating that teachers in the program would engage the students in the activities specified in the guide as cited above.

Because satisfactory results were obtained last year on most objectives (with the exception of second language among Latinos), the program was enriched and some objectives which appeared too easy (because pupils had the skills prior to coming to school) were eliminated. However, the performance criteria (percent of pupils attaining the objectives) were not changed except for one type of objective. Thus, meeting the objective criteria during the 1969-1970 school year meant a greater achievement.

The case where the criteria were changed was second-language learning objectives for Anglos. Last year's evaluation showed that, in the main, learning a second language was more difficult for Anglos than for Latinos, probably because both Anglos and Latino pupils live in an English-dominant society. New Spanish as a Second Language Materials have been prepared for pupil use in 1971-1972. During the 1970-1971 school year, the micro-objectives for the two ethnic groups have been kept the same, but performance criteria for the two groups have been changed. Latinos are now expected to perform better than Anglos.

Procedure

Program Description

The teachers in the Model School program treated the detailed micro-objectives as a skeleton which they fleshed out by developing specific day-by-day lesson plans. These plans were examined and reviewed by program supervisors who assured that they were in conformity with the specified program contents and with good teaching practice.

Each teaching team, consisting of an Anglo teacher and a Latino teacher, planned these activities so that all concepts and skills were introduced in the student's mother tongue, A selected group of the activities, in the program guides, was followed up in the second language. An attempt

was made to follow loosely the order of presentation shown on the time charts for each level; however, justified departures from the specified time sequence were accepted.

Evaluation

Instrument

The logs used during the 1970-1971 school year represent a considerable departure over the instruments used during the first year of program operation. This year the log consisted of two parts. One was a list of specified skills for which the teacher was to observe the pupils' performance. The second part consisted of a digitek sheet in which the teacher could indicate whether the pupil had or had not mastered the objectives.

When students were tested the first time, the teachers were instructed to observe each testee's performance on each micro-objective on the list. During the second testing period this procedure was changed, because of two factors: (a) teachers reported that in testing each pupil's performance on each objective, they frequently reobserved behavior which could have been observed during the ongoing classroom activity; and (b) teachers reported that the methods used during the first-collection period was so time consuming that the help of the supervisors was required in completing the task.

In response to these reactions, the procedure was changed during the second testing period. The teachers were instructed to record those behaviors which they had observed in ongoing classroom activities on the log, and then examine the pupils individually on those objectives which the teacher had not yet observed.

During both testing periods, a member of the research staff reexamined pupils on a sample of micro-objectives as a reliability check. Between nine and fifteen micro-objectives were selected from those upon which the pupils had been examined. The data, shown in the results section, indicated that both methods produced data of equal reliability.

Subjects. Pupils in all classes of the Model A and Model B program were eligible to serve as subjects. It was originally anticipated that the testing would occur three times during the year, using a different group of ten Anglo and ten Latino pupils from each team each time. Due to a teacher strike in the early part of the school year, it was not possible to test the first group of pupils until early December. Then other intervening testing programs made it unreasonable to resume the log observations until late in April when a second testing took place.

The pupils who were tested were randomly selected by the evaluator from the teachers' rollbooks. The samples were confined to pupils who had been enrolled in the program since the beginning of the school year. If a pupil selected for the sample had moved he was replaced with another. Occasionally, the teacher failed to report that a pupil had moved until after the data had been collected, resulting in some attrition of the sample.

At year end, the data from one second-grade Latino class (reported to be the "better" class in language arts) was lost after it had been collected by the teacher. This data is missing. The supervisor reports that performance in this class was probably as good or better on each of the objectives than in the other Latino class.

Analysis. The data were recorded by the teachers on digitek sheets. The teachers indicated whether or not the pupil had performed each micro-objective. These were converted to punch-cards, and the number of pupils who were successful on each micro-objective was tabulated at each point in time. The percent of pupils observed as successful was then computed.

Results

Prekindergarten

The performance of the prekindergarten group on micro-objectives specified for their grade level is summarized in Table 2.1 and shown in detail in Figure 2.1. The data shown are based on observation of ten Anglo and ten Latino pupils at each observation time. Overall year-end performance was mixed; Anglo exceeded and Latinos nearly met the criteria for the first language objective. Both Anglos and Latinos showed less mastery in their second languages than specified in the objectives. Pupil performance was close to anticipated minimum levels on the number concepts objective, and exceeded minimum performance criteria for the science objective. Comparison of year-end with mid-year results shows some growth in all objective areas for both ethnic groups, although some retrogressions were found on a few individual micro-objectives.

Anglo performance on Objective 1.1 was very uniform both at year-end, when 96.0% of the pupils succeeded on the typical micro-objective, and at mid-year, when it was 88.5%. At mid-year, performance was nearly at the 90% anticipated for year-end by the objective, and year-end performance exceeded this minimum level. Latino pupils, on the other hand, did not perform quite as well, averaging 77.8% at mid-year and 88.4% at year-end. The year-end performance is, however, at a level close enough to that indicated by the objective as to be regarded essentially the same as that anticipated by the program planners when the objective was written.

Anglo and Latino performance was quite different on the second language objective for the prekindergarten pupils, Objective 1.2. By year end, an average of 69.4% of Anglo pupils were able to complete the second language, which is short of the 80% objective. Examination of the performance on the individual micro-objective level shows that for this group performance was all or nothing. A majority of the pupils showed mastery of eleven micro-objectives, but none of or only one of the testees could respond to the remaining six. Latino performance was fairly close to the 90% objective, with average performance at 80.5%. It was quite uniform - with at least 50% of the pupils able to carry out each micro-objective (except one, which was carried out by half of the testees at mid-year).

Table 2.1 Prekindergarten Pupil Performance on Micro-objectives - Mean Performance for Each Objective. (10 Pupils Observed at Mid-year and Year-end for Each Ethnic Group).

Objective:	Mean Percent of Pupils Completing the Micro-objectives					
	Year-end Criteria		Mid-year Performance		Year-end Performance	
	Anglo	Latino	Anglo	Latino	Anglo	Latino
1.1 First Lang.	90%	90%	88.5%	77.8%	96%	88.4%
1.2 Second Lang.	80%	90%	25.9%	69.4%	59.4%	80.5%
1.3 Number Conc.	76%*	76%*	47.5	61.9%	69.4%	74.5%
1.4 Science	48%**	48%**	60.5%	63.3%	74.7%	88.0%

* Nine micro-objectives carried performance criteria of 90% of the pupils succeeding, eight carried performance criteria of 60% success.

** This objective stated that 60% of the pupils would succeed in completing 80% of the science micro-objectives.

Objective 1.3 As noted on Figure 2.1, there were two different performance criteria for micro-objectives of this objective. Micro-objectives numbered 1, 2, 3, 4, 8, 9, 11, 13, and 15 carried 90% criteria. They consisted of rote counting in both the mother tongue and the second language and some more complex skills in the first language only. Micro-objectives 5, 6, 7, 10, 12, 14 and 16 focused on more complex operations in the first language and most of the number skills to be carried out in the second language. Results on Table 2.1 show that Anglo pupils were operating at about the expected level for the simpler objectives (those with a 90% criterion), as they averaged 89%. For the more complex skills (those with a 60% criterion) the performance of Anglo pupils was not as good as anticipated. These objectives averaged 44% pupil attainment.

The Latino performance shows a trend in the opposite direction. On the simpler skills, attainment was at 80%, which is less than expected, but on the more difficult ones it was 68%, which was better than had been specified by the objective.

Examination of the individual objectives suggests reasons for the departures from anticipated performance levels. For both groups and both languages performance on the micro-objectives involving discrimination of the shapes, especially rectangle is low. According to teachers, the rectangle is especially difficult for children of this age group because they become confused with the square. Teachers reported that they therefore avoided teaching this micro-objective.

There is also a trend toward Anglo pupils' performance exceeding

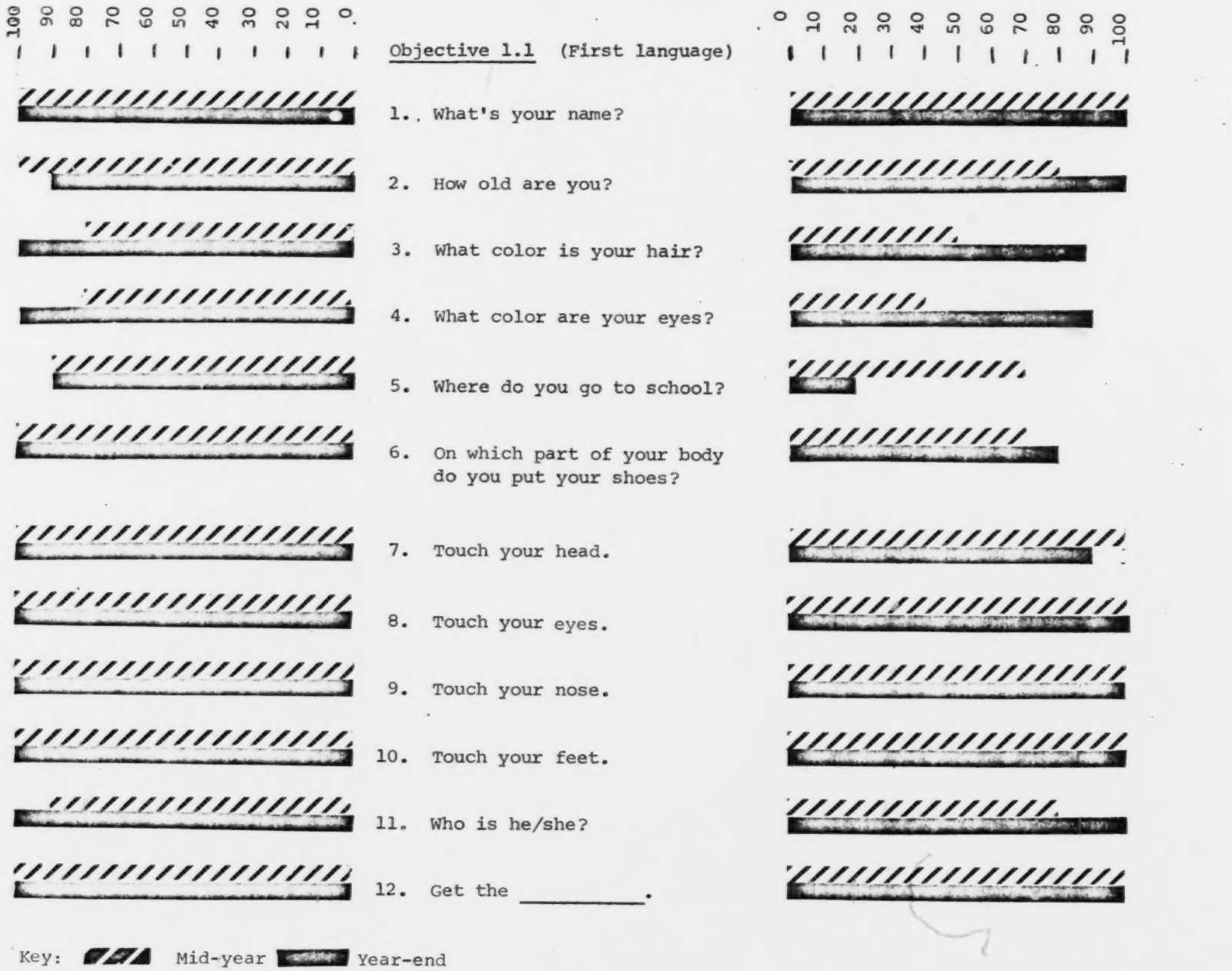

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 1.1 (First language)
1. What's your name?
2. How old are you?
3. What color is your hair?
4. What color are your eyes?
5. Where do you go to school?
6. On which part of your body do you put your shoes?
7. Touch your head.
8. Touch your eyes.
9. Touch your nose.
10. Touch your feet.
11. Who is he/she?
12. Get the _____.
Key: Mid-year Year-end

FIGURE 2.1 PERCENT OF PREKINDERGARTEN STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 1

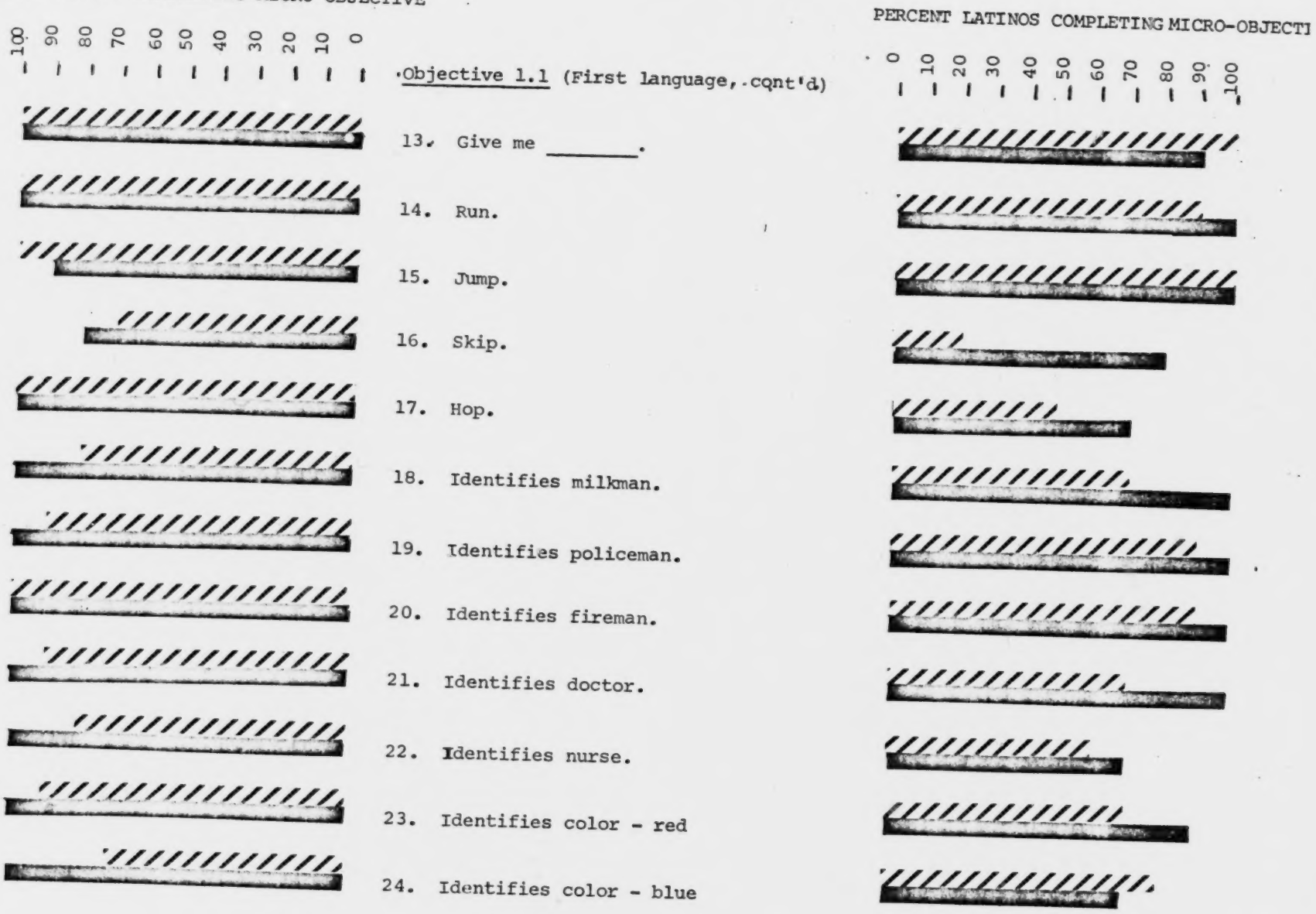

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
Objective 1.1 (First language, cont'd)
13. Give me _____.
14. Run.
15. Jump.
16. Skip.
17. Hop.
18. Identifies milkman.
19. Identifies policeman.
20. Identifies fireman.
21. Identifies doctor.
22. Identifies nurse.
23. Identifies color - red
24. Identifies color - blue
PERCENT LATINOS COMPLETING MICRO-OBJECTI
0 10 20 30 40 50 60 70 80 90 100

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 2

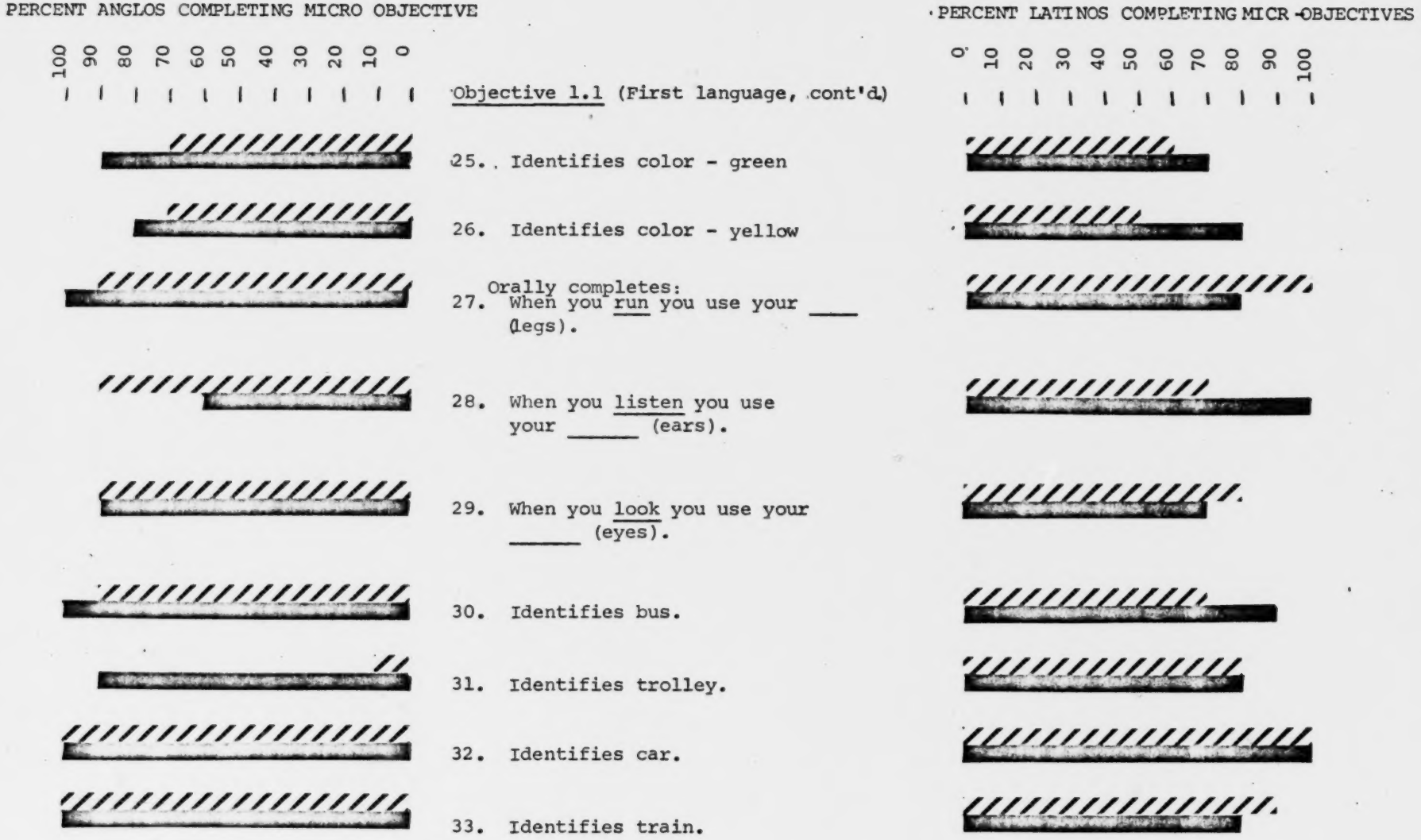

PERCENT ANGLOS COMPLETING MICRO OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVES
0 10 20 30 40 50 60 70 80 90 100
Objective 1.1 (First language, cont'd)
25. Identifies color - green
26. Identifies color - yellow
27. Orally completes: When you run you use your ___ (legs).
28. When you listen you use your _____ (ears).
29. When you look you use your _____ (eyes).
30. Identifies bus.
31. Identifies trolley.
32. Identifies car.
33. Identifies train.

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 3

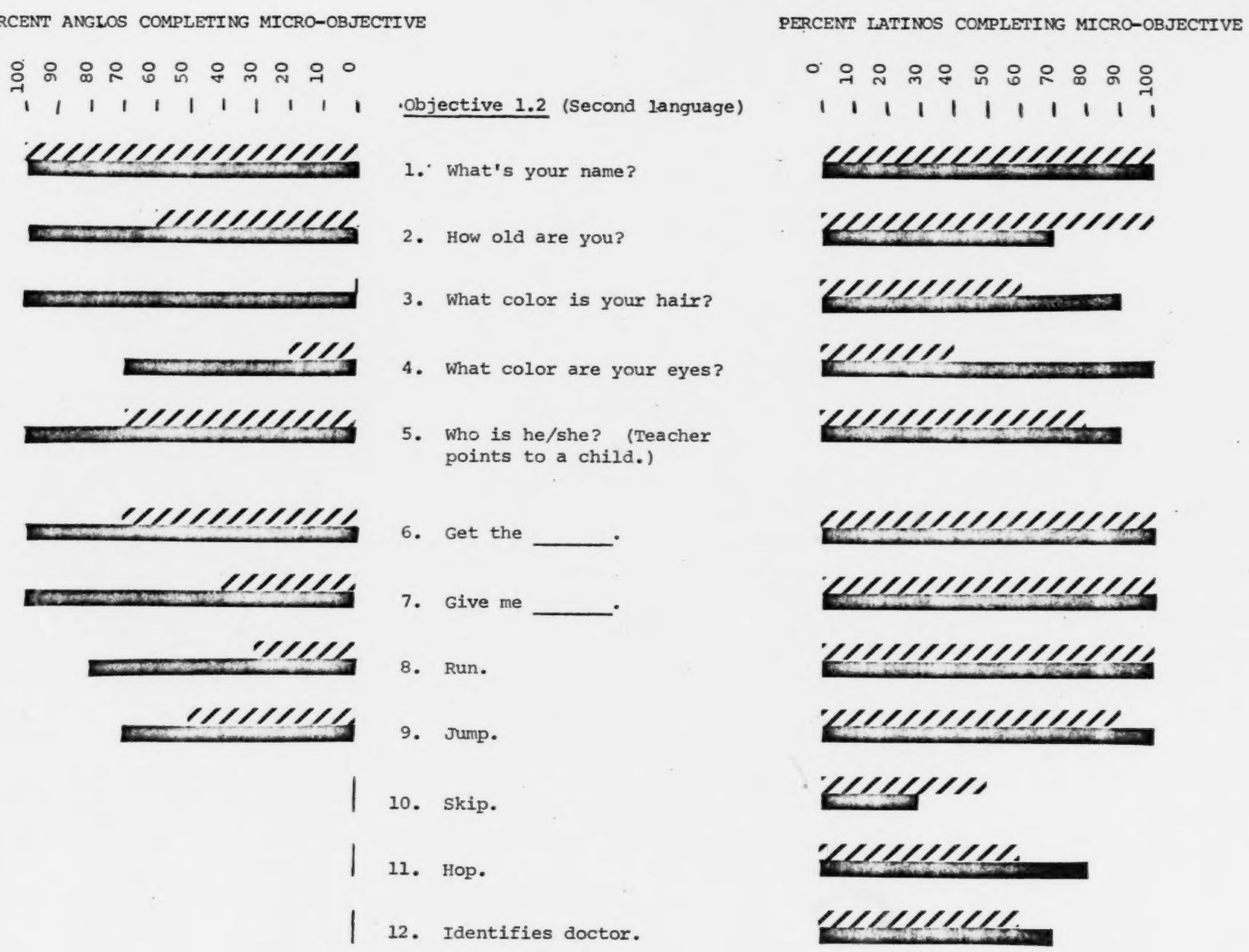

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 1.2 (Second language)
1. What's your name?
2. How old are you?
3. What color is your hair?
4. What color are your eyes?
5. Who is he/she? (Teacher points to a child.)
6. Get the _____.
7. Give me _____.
8. Run.
9. Jump.
10. Skip.
11. Hop.
12. Identifies doctor.

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 4

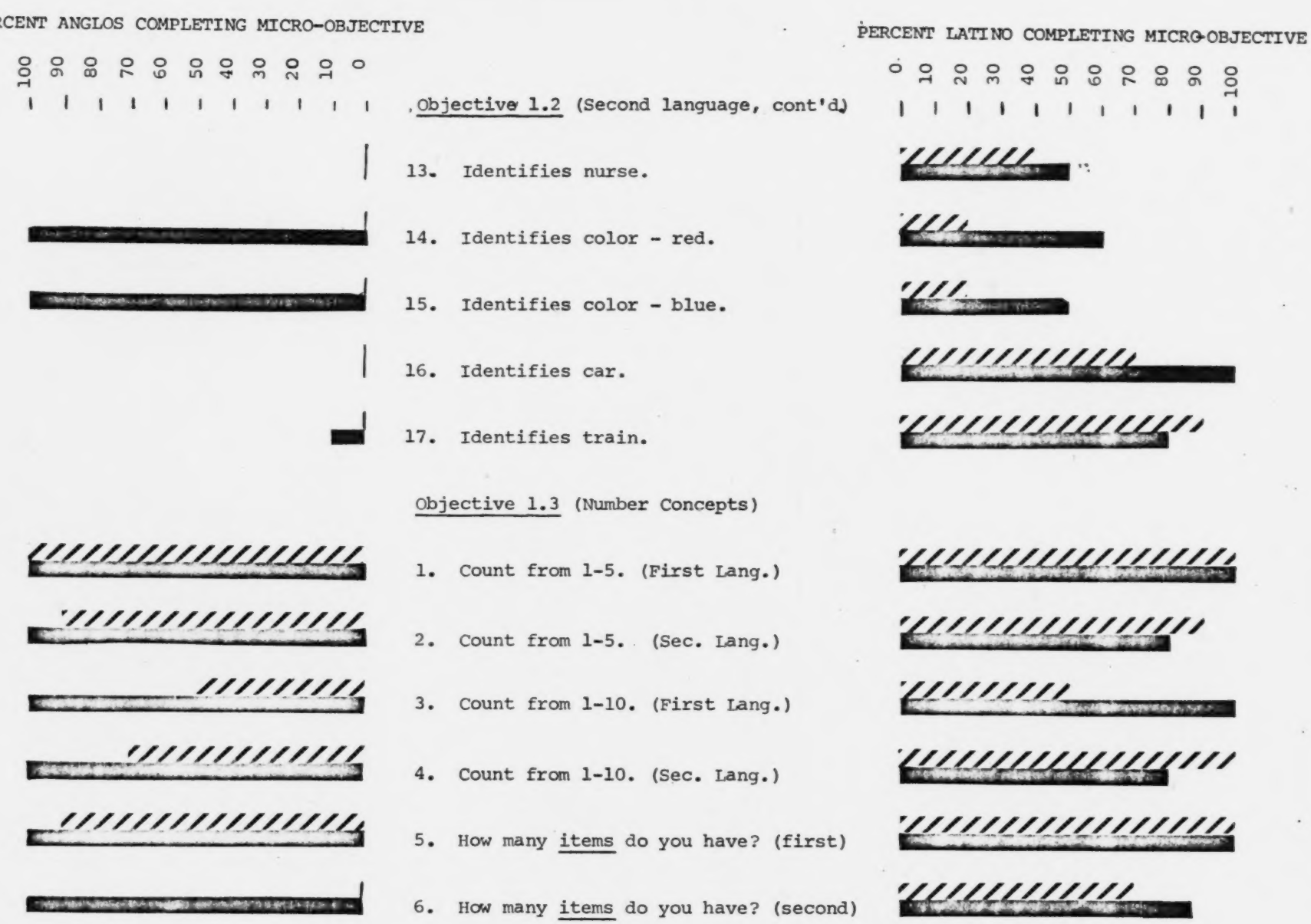

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINO COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 1.2 (Second language, cont'd)
13. Identifies nurse.
14. Identifies color - red.
15. Identifies color - blue.
16. Identifies car.
17. Identifies train.
Objective 1.3 (Number Concepts)
1. Count from 1-5. (First Lang.)
2. Count from 1-5. (Sec. Lang.)
3. Count from 1-10. (First Lang.)
4. Count from 1-10. (Sec. Lang.)
5. How many items do you have? (first)
6. How many items do you have? (second)

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 5

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINO COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 1.3 (Number Concepts, cont'd)
7. Adds groups of objects. (First lang.)
8. Weight comparisons.
9. Discriminates shapes: Circle (First lang.)
10. Discriminates shapes: Circle (Second lang.)
11. Discriminates shapes: triangle (First lang.)
12. Discriminates shapes: triangle (Sec. lang.)
13. Discriminates shapes: rectangle (First lang.)
14. Discriminates shapes: rectangle (Sec. lang.)
15. Discriminates shapes: square (First lang.)

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 6

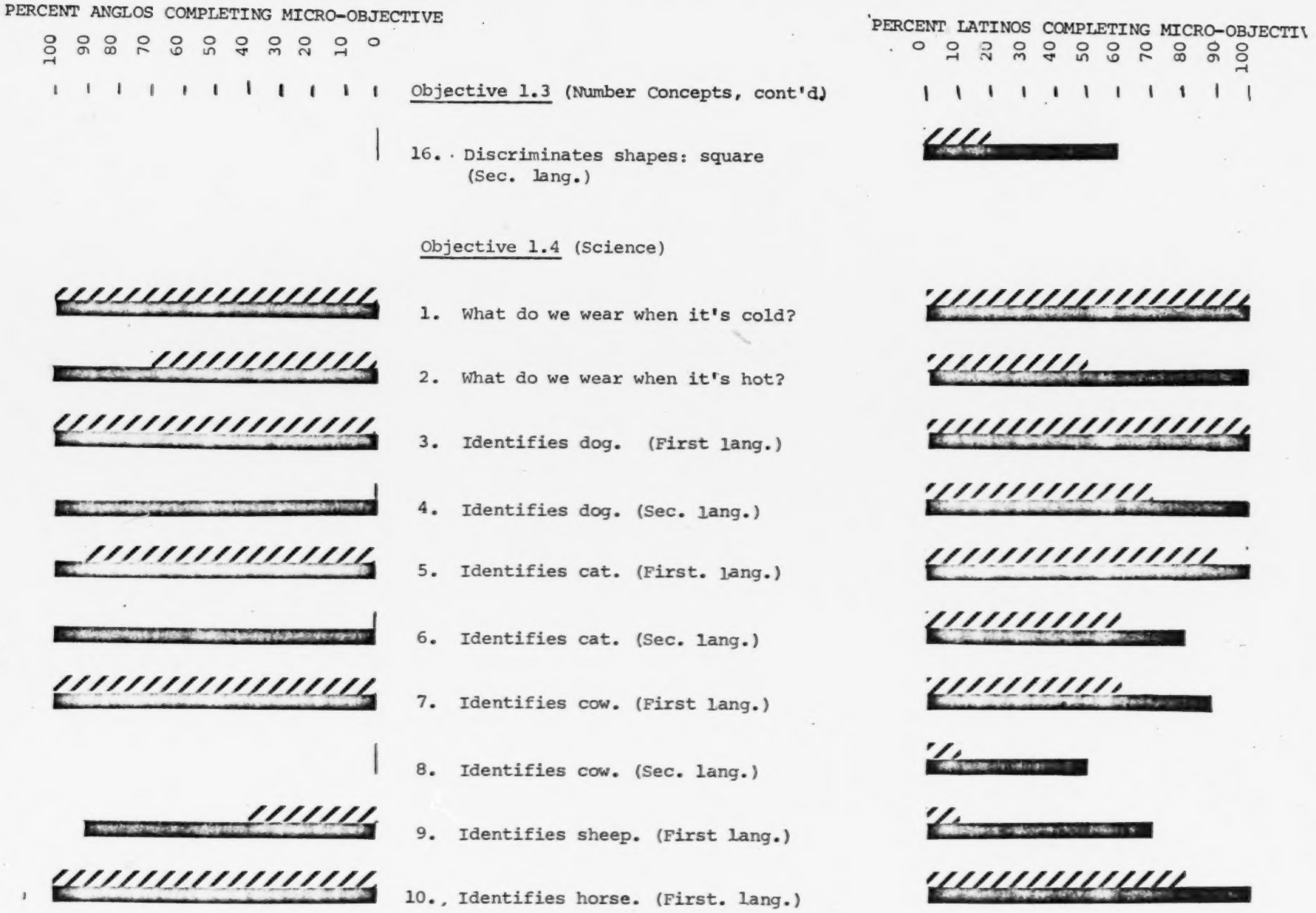

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIV
0 10 20 30 40 50 60 70 80 90 100
Objective 1.3 (Number Concepts, cont'd)
16. Discriminates shapes: square (Sec. lang.)
Objective 1.4 (Science)
1. What do we wear when it's cold?
2. What do we wear when it's hot?
3. Identifies dog. (First lang.)
4. Identifies dog. (Sec. lang.)
5. Identifies cat. (First. lang.)
6. Identifies cat. (Sec. lang.)
7. Identifies cow. (First lang.)
8. Identifies cow. (Sec. lang.)
9. Identifies sheep. (First lang.)
10. Identifies horse. (First. lang.)

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 7

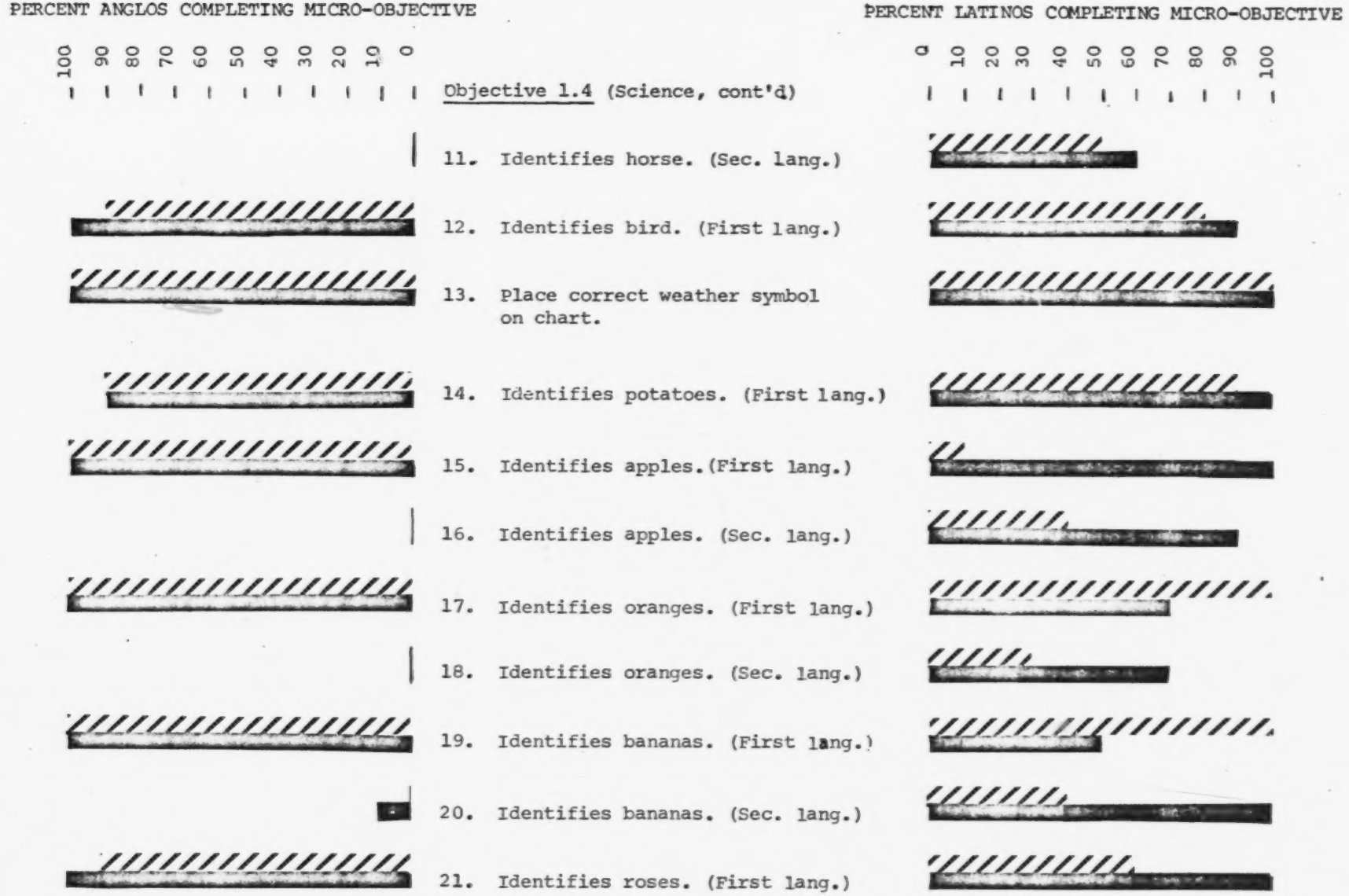

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 1.4 (Science, cont'd)
11. Identifies horse. (Sec. lang.)
12. Identifies bird. (First lang.)
13. Place correct weather symbol on chart.
14. Identifies potatoes. (First lang.)
15. Identifies apples. (First lang.)
16. Identifies apples. (Sec. lang.)
17. Identifies oranges. (First lang.)
18. Identifies oranges. (Sec. lang.)
19. Identifies bananas. (First lang.)
20. Identifies bananas. (Sec. lang.)
21. Identifies roses. (First lang.)

FIGURE 2.1 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 8

the anticipated criterion on those micro-objectives in their first language, but showing large deficits on some of them in their second language. The Latino pupils show less than ideal performance in their first language, but better than anticipated performance in their second.

Objective 1.4 - Prekindergarten Science consisted of 21 micro-objectives focusing on identification and classification of weather, plants and animals. During the first year of program operation, these activities were introduced in the pupils' first language; during the 1970-1971 school year, the science area was enlarged to include repetition of many of these concepts in the second language. The objective states that 60% of the children should be able to carry out 80% of the micro-objectives successfully. Therefore, an overall rate of 48% was necessary for satisfactory completion of the objective. Both Anglo and Latino pupils attained this level. Observation of pupils at year end on individual micro-objectives showed marked differences in the pattern of performance on the first language micro-objectives and the second-language objectives, with greater differences observed for the Anglo pupils: Among the Anglos, the first-language micro-objectives averaged 97.8%; among the Latinos, 93.2%. The second language micro-objectives (4, 6, 8, 11, 16, 18, and 20) proved very difficult for Anglos, and moderately difficult for Latinos. All Anglos could do three, but practically no Anglo children could carry out the remainder. In contrast, Latino pupils performed well on science micro-objectives in Spanish and English.

Kindergarten

The kindergarten program underwent considerable revision from the 1969-1970 school year to the 1970-1971 school year. The major changes were: (1) initiation of the Model B kindergarten, which met for a full day, (2) initiation of a special all-day kindergarten for the most promising of the previous year's prekindergarten pupils, and (3) inclusion of some of the previous year's prekindergarten pupils in the program.

The all-day kindergarten group's performance is discussed in the following section of this paper. Here, results for the Model B and regular kindergartens are presented. They are summarized in Table 2.2 and shown in Figure 2.2.

Objective 2.1 - Kindergarten first language. It was expected that 90% of the pupils would complete its 37 micro-objectives by year end. Both Anglos and Latinos showed this level by year end. At mid-year, the performance averaged 82.2% for Anglos and 79.6% for Latinos. One micro-objective, Choosing Pairs of Words that begin with the Same Letter "was the most difficult for both ethnic groups."

Objective 2.2 - Kindergarten second language included 17 micro-objectives. An average of 80% of the pupils performing this was anticipated for Anglos, and average of 90% for Latinos. As can be seen, Anglo pupils averaged 43.5%, which is below the expected criterion. Latinos, on the other hand, exceeded the criterion level, averaging 95.3%. Examination of the mid-year results shows that both groups gained considerably in second language performance during the last half of the year, especially the Anglos

whose growth seems to have occurred primarily in the latter half of the year. When the individual micro-objectives for this second language objective were examined, there was no clear pattern showing those objectives Anglos were able to carry out, and those which they were unable to fulfill.

Table 2.2 Performance of Regular Kindergarten Pupils in the Model A and Model B on the Micro-objectives Mean for Each Objective

Objective:	Mean Percent of Pupils Completing the Micro-objectives*					
	Year-end Criteria		Mid-year Performance		Year-end Performance	
	Anglo	Latino	Anglo	Latino	Anglo	Latino
2.1 First Lang.	90%	90%	82.2%	79.6%	95.9%	93.8%
2.2 Second Lang.	80%	90%	13.9%	65.7%	43.5%	95.3%
2.3 Number Conc.	90%	90%	49.5%	43.5%	68.3%	87.8%
2.4 Science	90%	90%	67.1%	80.7%	86.1	95.5%

* Twenty-five children were observed at mid-year and year-end except for the five second language micro-objectives which are part of Objectives 2.3 and 2.4. At year-end, one teacher failed to complete the testing of her Anglo pupils. Therefore, only 15 pupils were observed for these micro-objectives.

Objective 2.3 - Kindergarten number concepts. This objective specified that pupils would be able to carry out an average of 90% of the 14 micro-objectives for this objective -- nine in the first language and five in the second.

Pupil performance was variable, with clear-cut differences in the micro-objectives in the first and second languages. At year-end Anglos averaged 92% for those objectives carried out in their first language, but only 26% for those in their second. Latino pupils showed greater mastery in their second language than in their first, but the differences are relatively small -- 84% in their first language, 95% in their second. Overall the Anglos were somewhat short of the overall criterion (averaging 68.2%); Latinos were performing at about the level anticipated (87.7%).

Objective 2.4 - Natural and biological phenomena in the Kindergarten contained 16 micro-objectives, 14 in the pupil's mother tongue and two in the pupil's second language. It carried a criterion of 90%. As with other objectives with both first- and second-language elements, there was ethnic group-language interaction.

By year-end, the Anglos' average performance on the first language micro-objective was 92%, but was only 45% for those in Spanish. Overall,

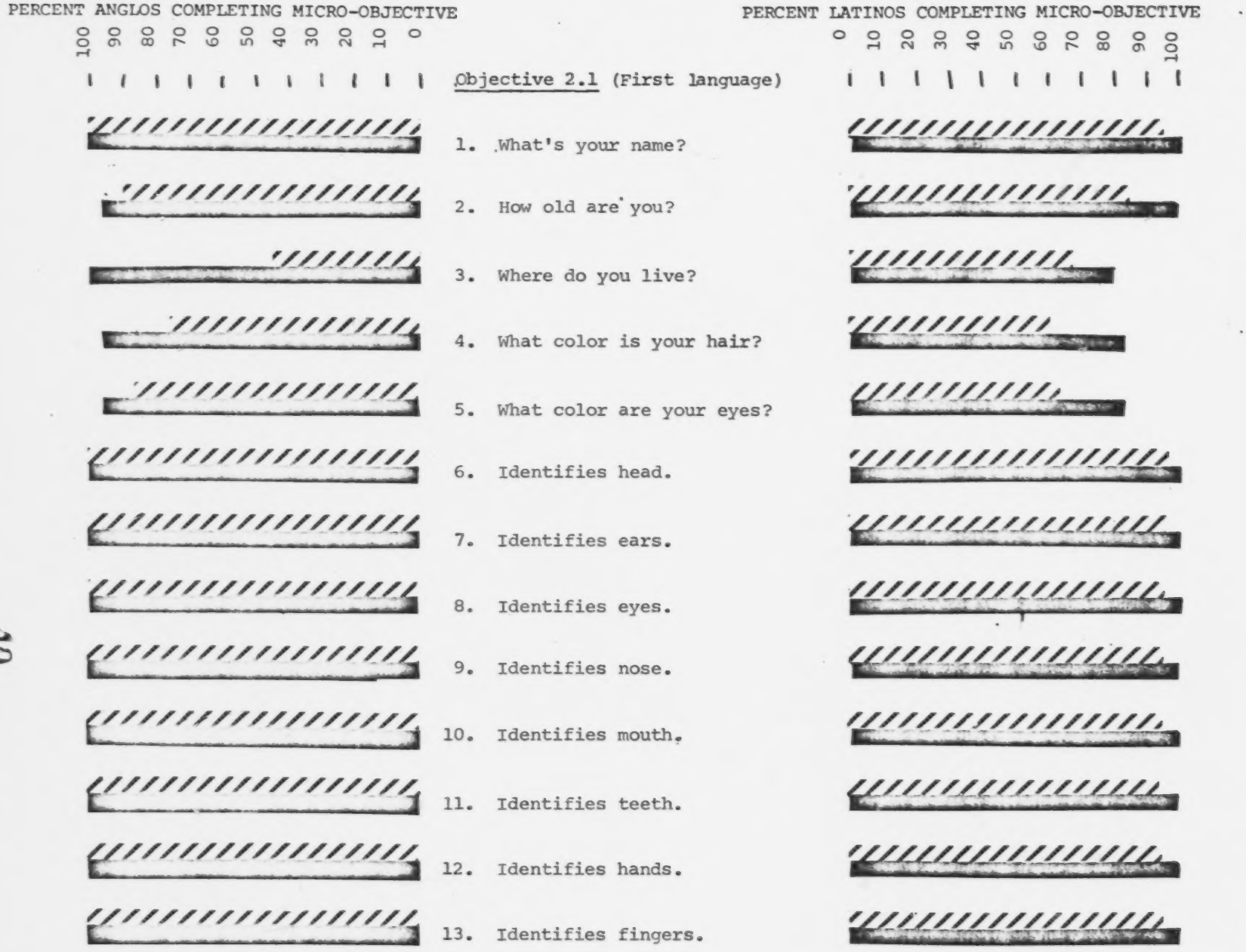

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1 (First language)
1. What's your name?
2. How old are you?
3. Where do you live?
4. What color is your hair?
5. What color are your eyes?
6. Identifies head.
7. Identifies ears.
8. Identifies eyes.
9. Identifies nose.
10. Identifies mouth.
11. Identifies teeth.
12. Identifies hands.
13. Identifies fingers.
Key: Mid-year Year-end

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 1

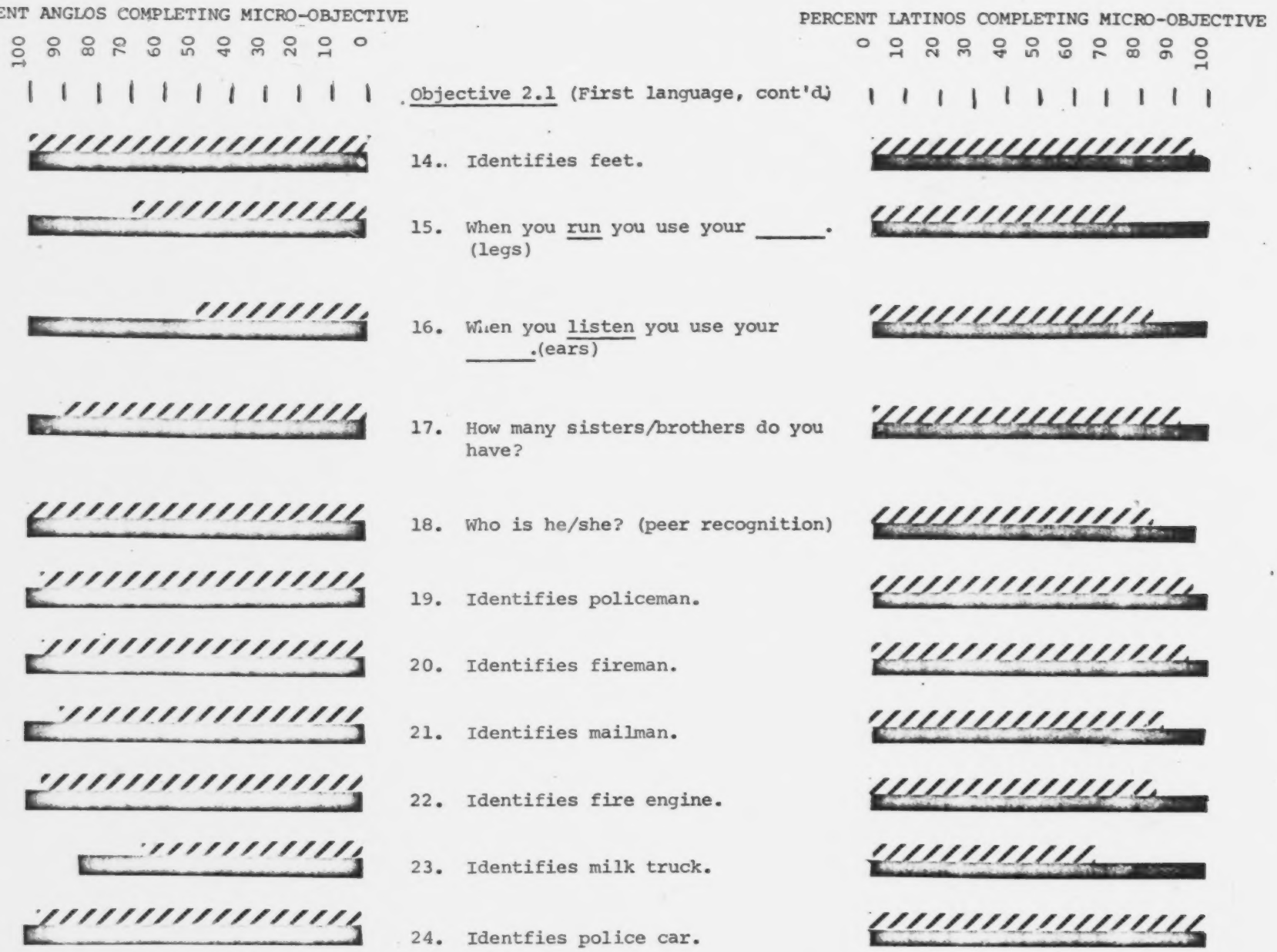

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1 (First language, cont'd)
14. Identifies feet.
15. When you run you use your _____. (legs)
16. When you listen you use your _____.(ears)
17. How many sisters/brothers do you have?
18. Who is he/she? (peer recognition)
19. Identifies policeman.
20. Identifies fireman.
21. Identifies mailman.
22. Identifies fire engine.
23. Identifies milk truck.
24. Identfies police car.

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 2

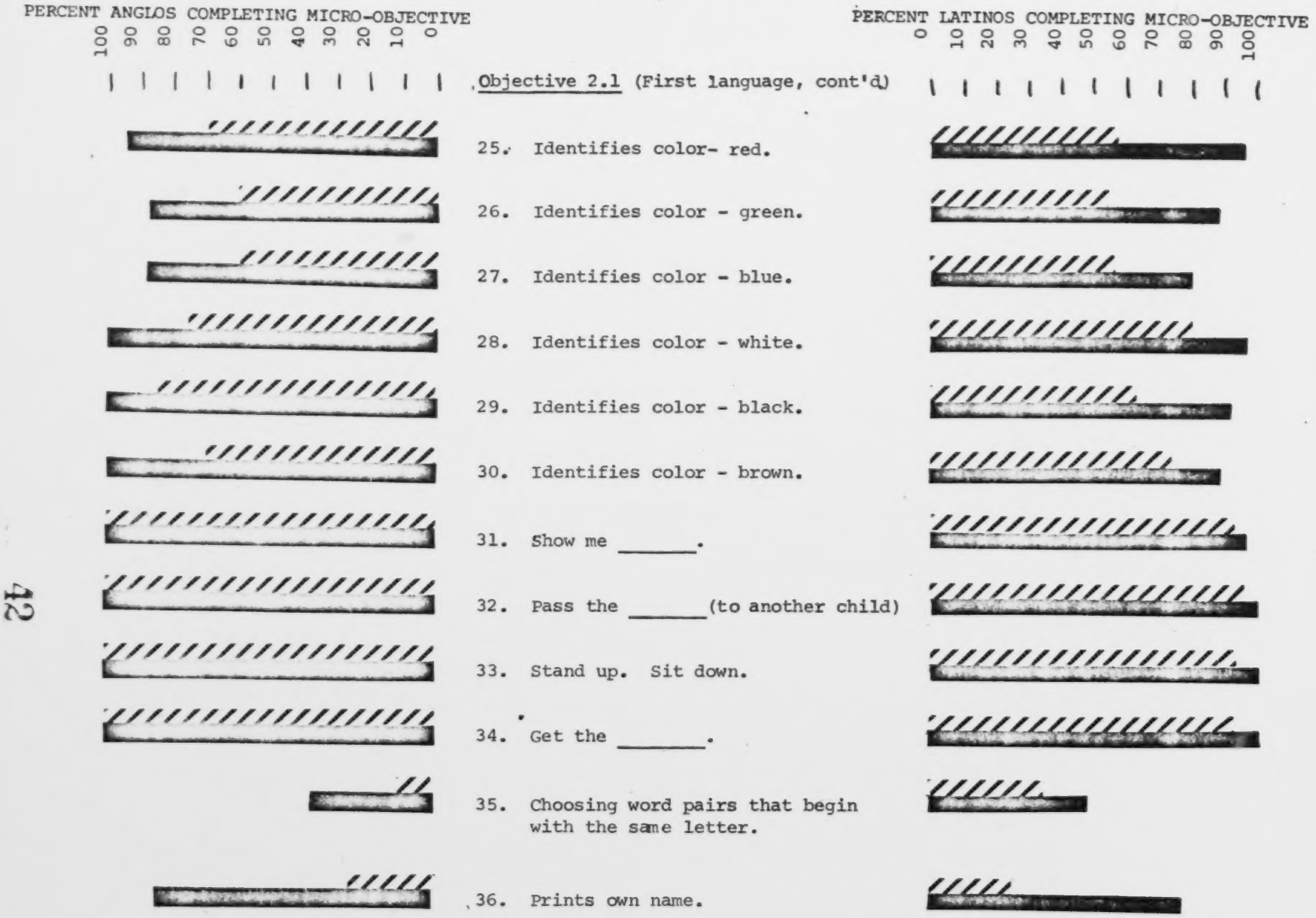

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1 (First language, cont'd)
25. Identifies color- red.
26. Identifies color - green.
27. Identifies color - blue.
28. Identifies color - white.
29. Identifies color - black.
30. Identifies color - brown.
31. Show me _____.
32. Pass the _____(to another child)
33. Stand up. Sit down.
34. Get the _____.
35. Choosing word pairs that begin with the same letter.
36. Prints own name.

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 3

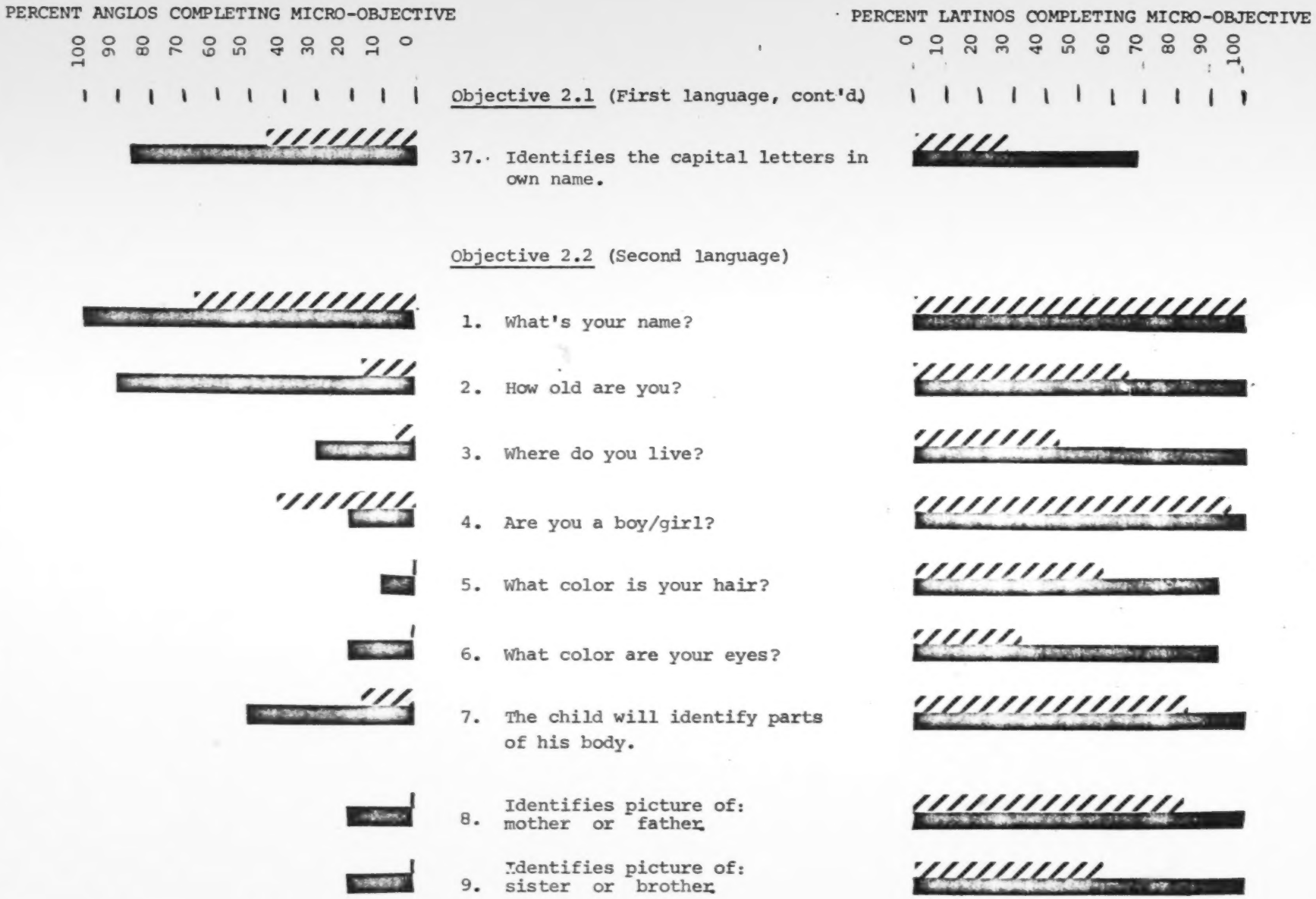

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1 (First language, cont'd)
37. Identifies the capital letters in own name.
Objective 2.2 (Second language)
1. What's your name?
2. How old are you?
3. Where do you live?
4. Are you a boy/girl?
5. What color is your hair?
6. What color are your eyes?
7. The child will identify parts of his body.
8. Identifies picture of: mother or father.
9. Identifies picture of: sister or brother.

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 4

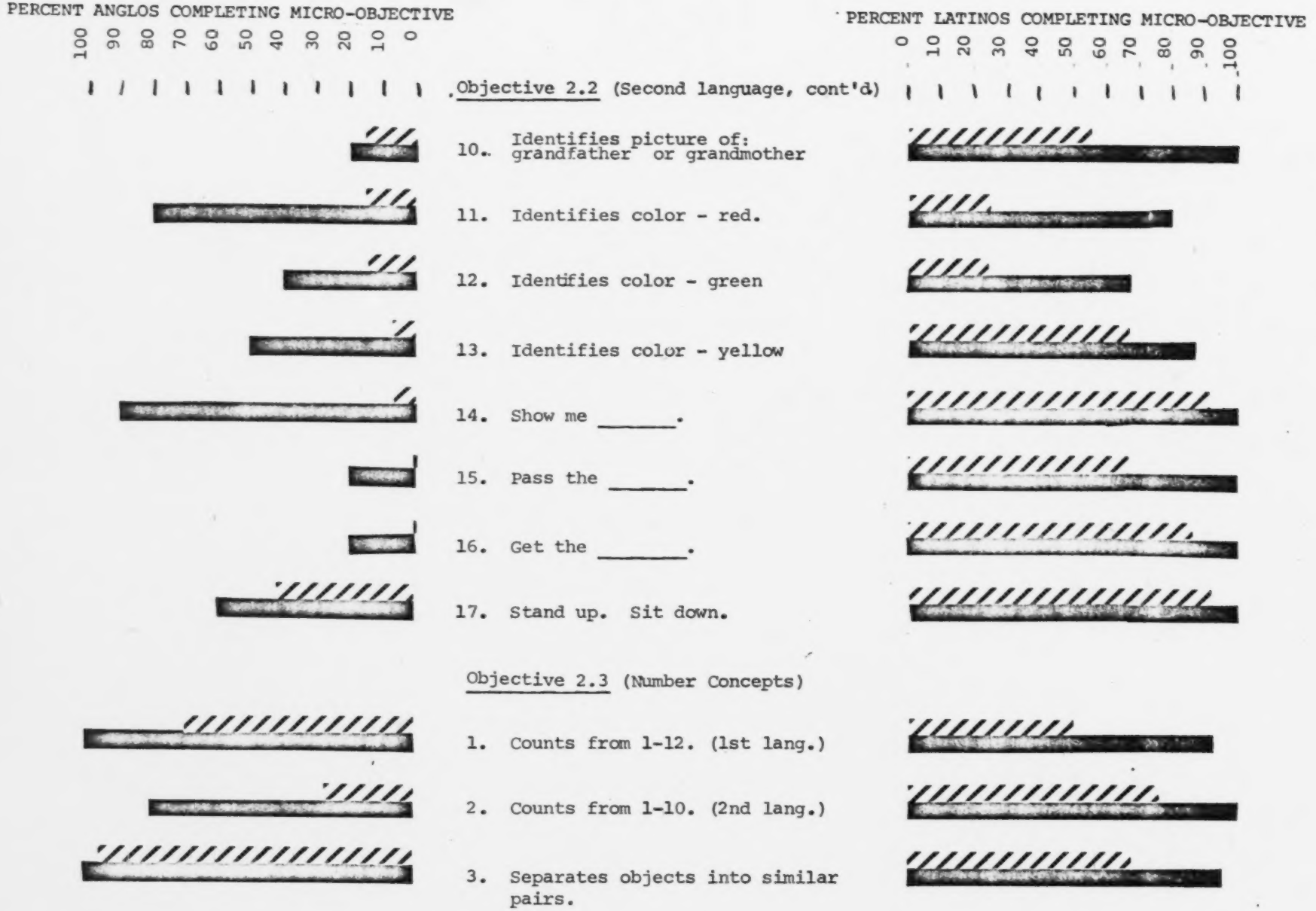

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.2 (Second language, cont'd)
10. Identifies picture of: grandfather or grandmother
11. Identifies color - red.
12. Identifies color - green
13. Identifies color - yellow
14. Show me _____.
15. Pass the _____.
16. Get the _____.
17. Stand up. Sit down.
Objective 2.3 (Number Concepts)
1. Counts from 1-12. (1st lang.)
2. Counts from 1-10. (2nd lang.)
3. Separates objects into similar pairs.

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 5

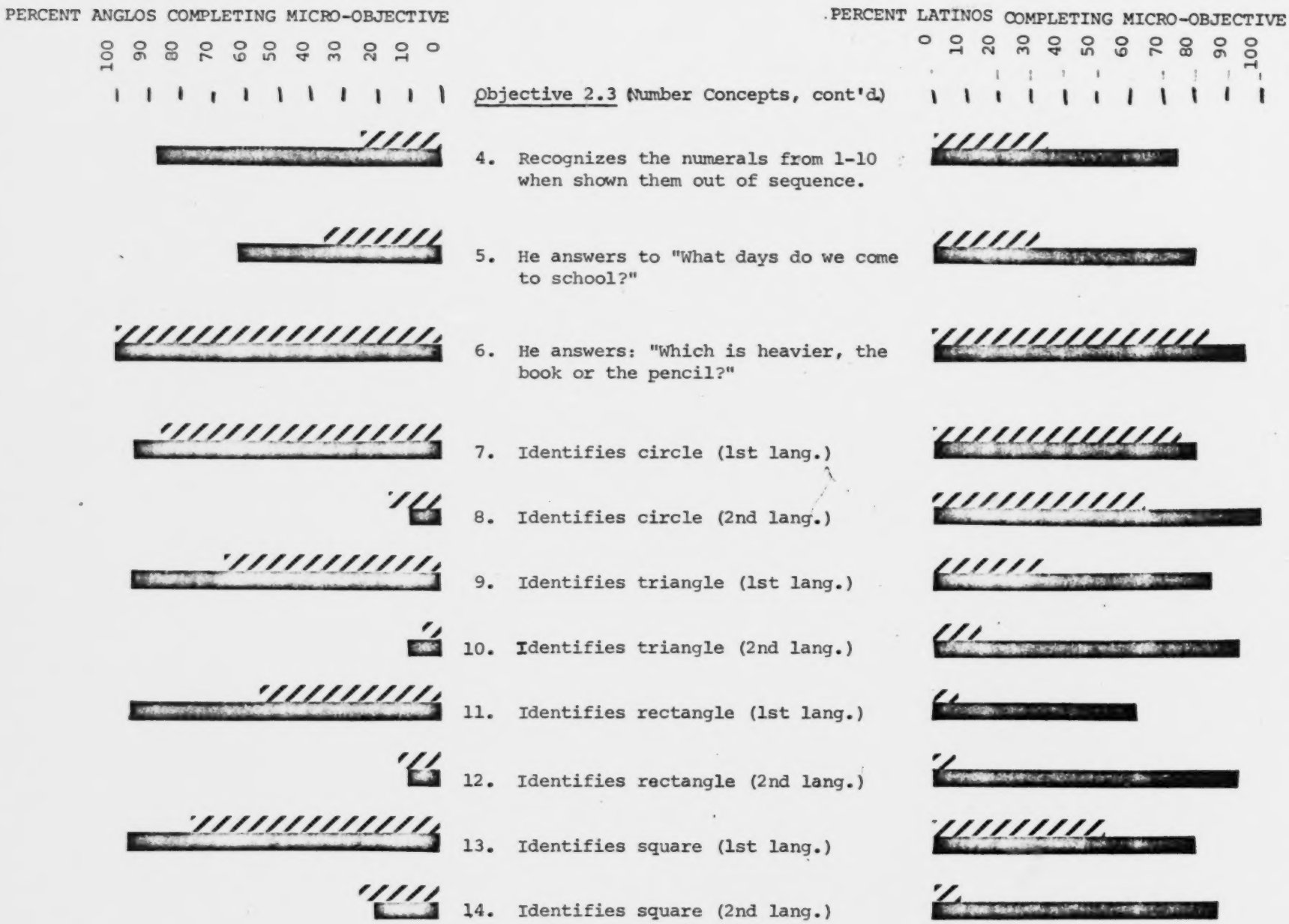

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.3 (Number Concepts, cont'd)
4. Recognizes the numerals from 1-10 when shown them out of sequence.
5. He answers to "What days do we come to school?"
6. He answers: "Which is heavier, the book or the pencil?"
7. Identifies circle (1st lang.)
8. Identifies circle (2nd lang.)
9. Identifies triangle (1st lang.)
10. Identifies triangle (2nd lang.)
11. Identifies rectangle (1st lang.)
12. Identifies rectangle (2nd lang.)
13. Identifies square (1st lang.)
14. Identifies square (2nd lang.)

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 6

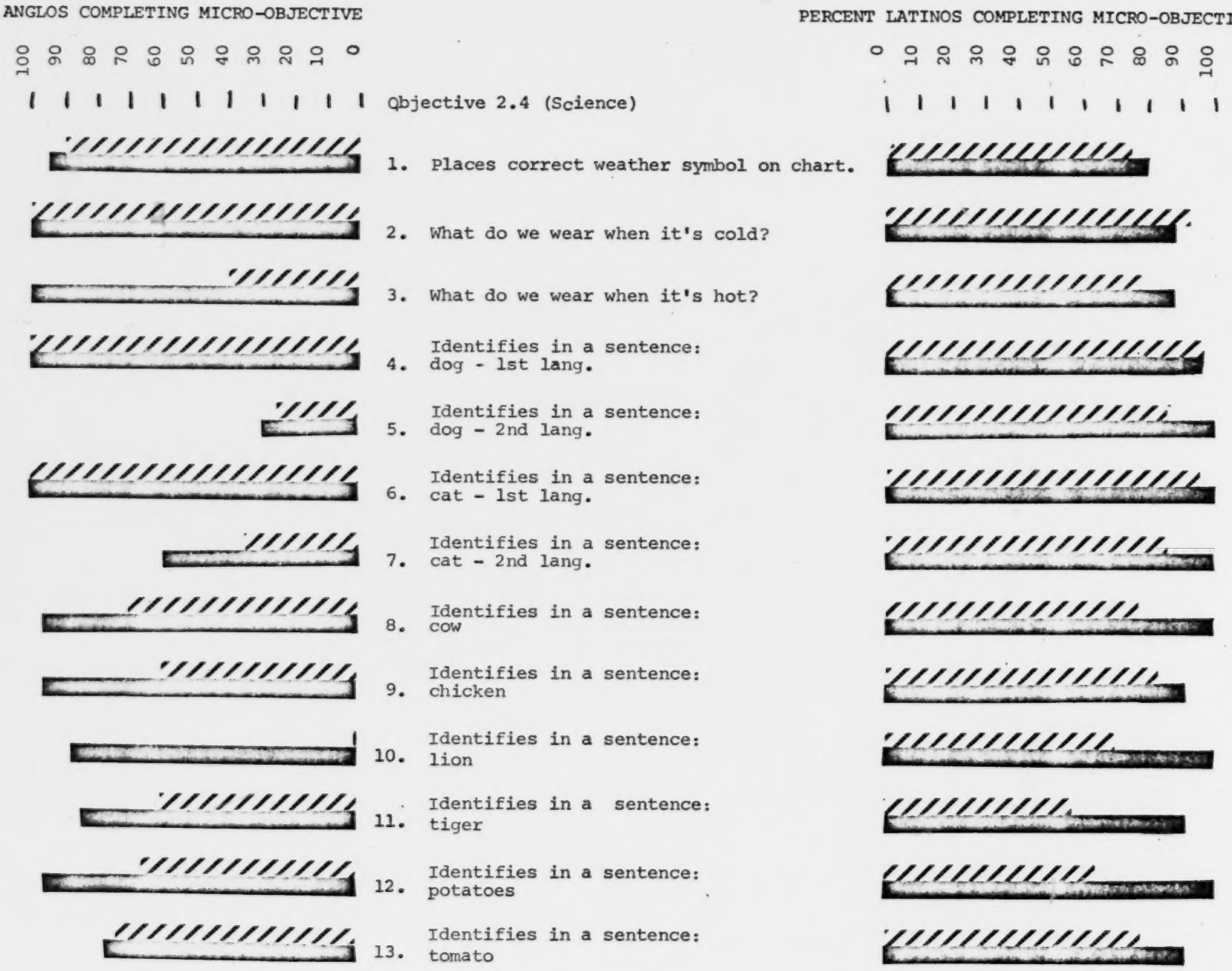

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.4 (Science)
1. Places correct weather symbol on chart.
2. What do we wear when it's cold?
3. What do we wear when it's hot?
4. Identifies in a sentence: dog - 1st lang.
5. Identifies in a sentence: dog - 2nd lang.
6. Identifies in a sentence: cat - 1st lang.
7. Identifies in a sentence: cat - 2nd lang.
8. Identifies in a sentence: cow
9. Identifies in a sentence: chicken
10. Identifies in a sentence: lion
11. Identifies in a sentence: tiger
12. Identifies in a sentence: potatoes
13. Identifies in a sentence: tomato

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 7

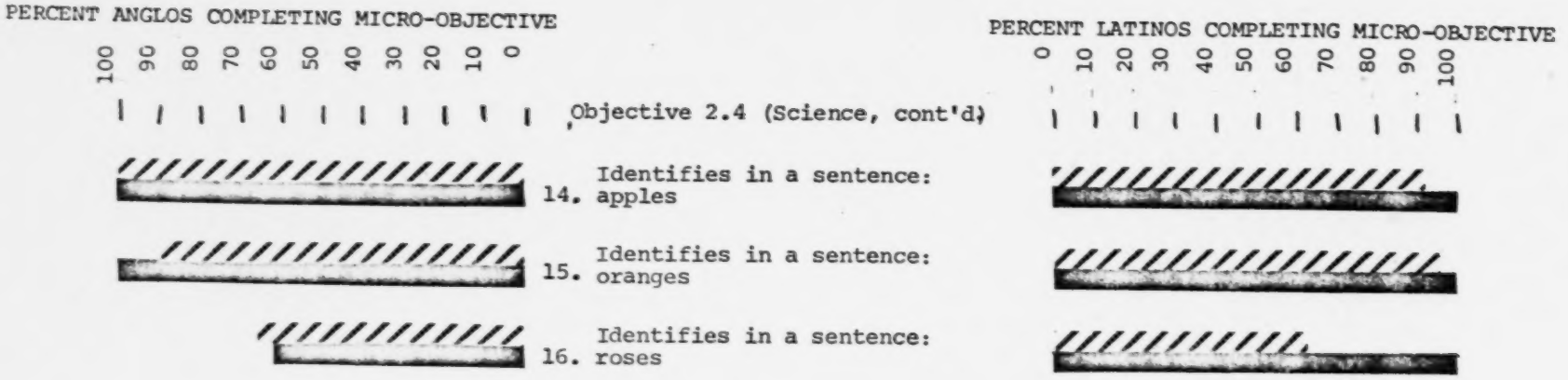

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.4 (Science, cont'd)
14. Identifies in a sentence: apples
15. Identifies in a sentence: oranges
16. Identifies in a sentence: roses

FIGURE 2.2 PERCENT OF THE KINDERGARTEN THAT TEACHERS OBSERVED PERFORMING MICRO-OBJECTIVES, PART 8

performance was at the 86% level, which is just a shade under the criterion. Latinos, on the other hand performed well in both their first and second languages, and averaged 95.5%.

All Day Kindergarten

Pupils in this component were admitted on the basis of testing in the Kindergarten Readiness test administered last year, and on the basis of teacher recommendation. The objectives developed for this group were a mixture of those which appeared in the regular kindergarten and first-grade programs.

The objectives developed are organized in a manner similar to that of the regular kindergarten, and have been given the same numbers, except that they have been followed by an asterisk(*). Results are summarized on Table 2.3 and shown in detail on Figure 2.3. Program supervisors suggested that the criteria (percent of pupils performing the micro-objectives) be adapted from the regular kindergarten objectives.

Objective 2.1* - All day kindergarten, first language. Both Anglos and Latinos showed nearly perfect mastery of the 56 micro-objectives and exceeded the 90% criterion of this objective by year-end. All Anglos observed were successful with all but three micro-objectives, and all Latinos observed succeeded with all objectives. Overall averages were 95.4% for Anglos and 100% for Latinos by year-end. At mid-year, the samples observed suggested that there was much mastery of these first language skills. All but nine of the 56 objectives were mastered by better than 80% at mid-year. All but five were mastered at better than 80% by the Latinos.

Table 2.3 Performance of All-Day Kindergarten Pupils in the Model A Program on Micro-Objectives -- Mean for Each Objective

Objective:	Mean Percent of Pupils Completing the Micro-objective (Seven Anglos and Latinos Observed at Mid-year, Nine Anglos, Ten Latinos at Year-end.					
	Year-end Criteria		Mid-year Performance		Year-end Performance	
	Anglo	Latino	Anglo	Latino	Anglo	Latino
2.1* First Language	90%	90%	79.5%	91.6%	95.4%	100%
2.2* Second Language	80%	90%	37.9%	88.5%	94.4%	100%
2.3* Number Conc.	90%	90%	52.2%	71.4%	82.7%	99.2%
2.4* Science	90%	90%	49.7%	75.5%	85.5%	100%

Mastery of second language (Objective 2.2*) skills in the all-day kindergarten was very good for both Anglo and Latino pupils. At year-end

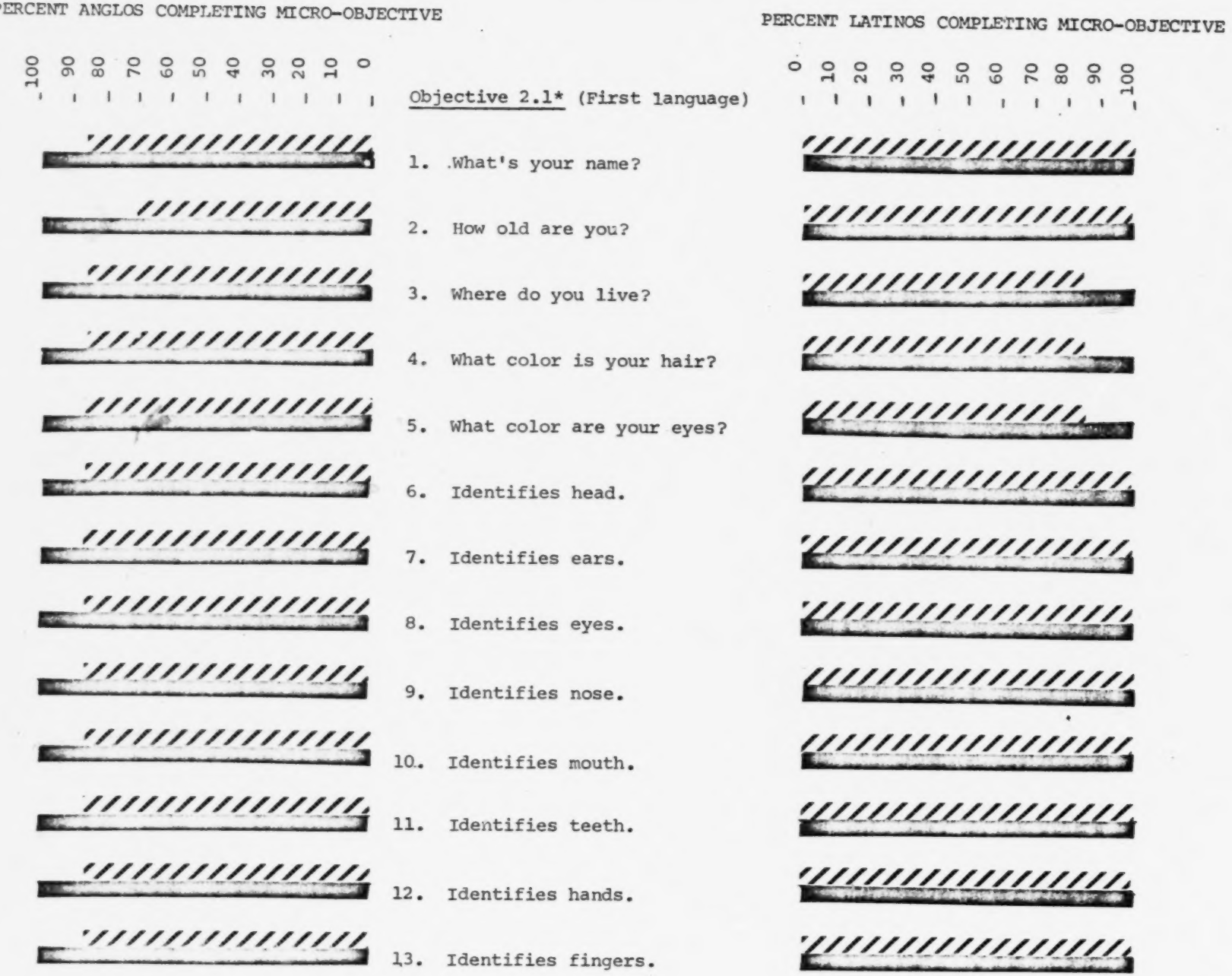

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1* (First language)
1. What's your name?
2. How old are you?
3. Where do you live?
4. What color is your hair?
5. What color are your eyes?
6. Identifies head.
7. Identifies ears.
8. Identifies eyes.
9. Identifies nose.
10. Identifies mouth.
11. Identifies teeth.
12. Identifies hands.
13. Identifies fingers.

FIGURE 2.3 PERCENT OF ALL DAY KINDERGARTEN STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 1

Key: Mid-year Year-end

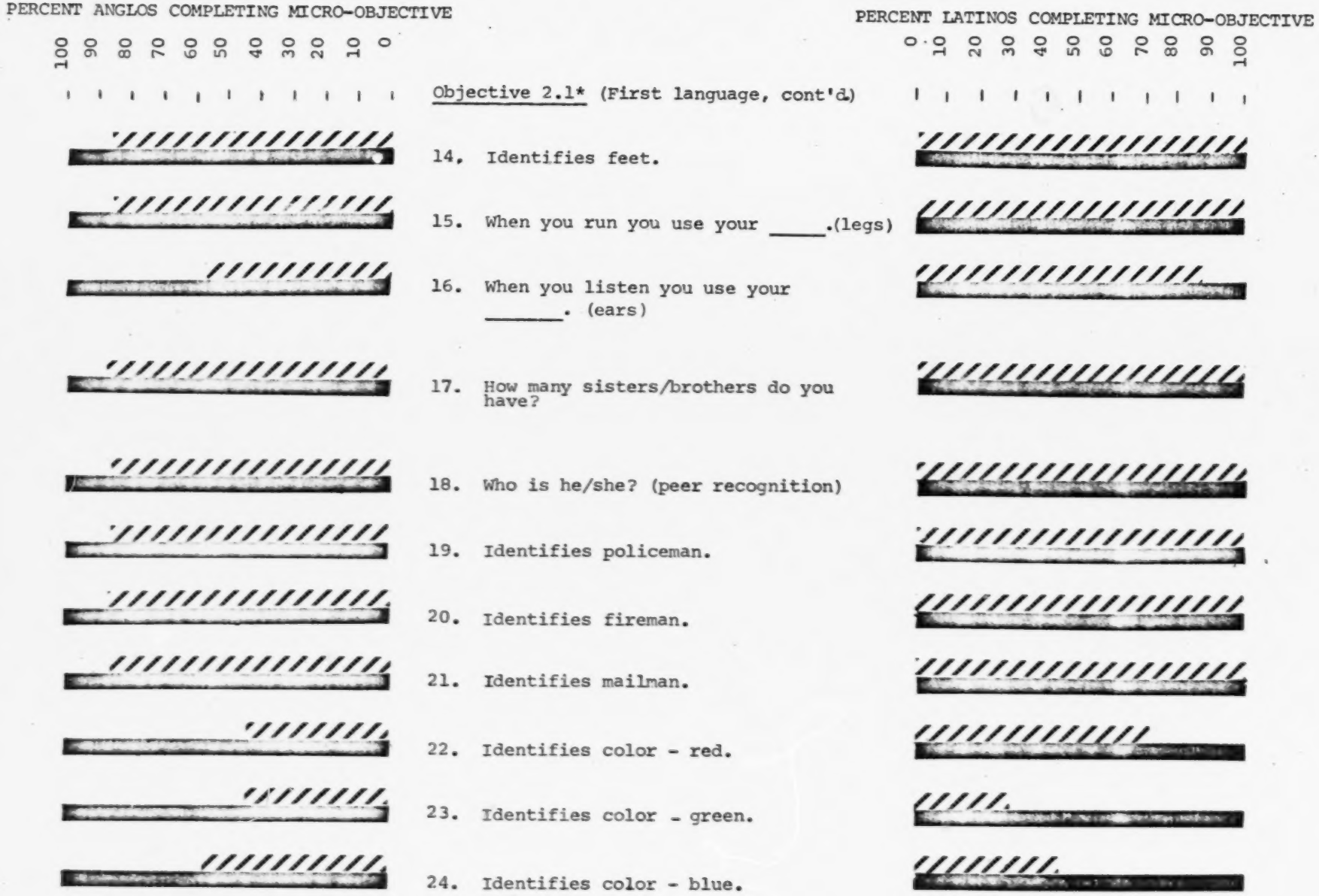

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1* (First language, cont'd)
14. Identifies feet.
15. When you run you use your _____.(legs)
16. When you listen you use your _____. (ears)
17. How many sisters/brothers do you have?
18. Who is he/she? (peer recognition)
19. Identifies policeman.
20. Identifies fireman.
21. Identifies mailman.
22. Identifies color - red.
23. Identifies color - green.
24. Identifies color - blue.

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 2

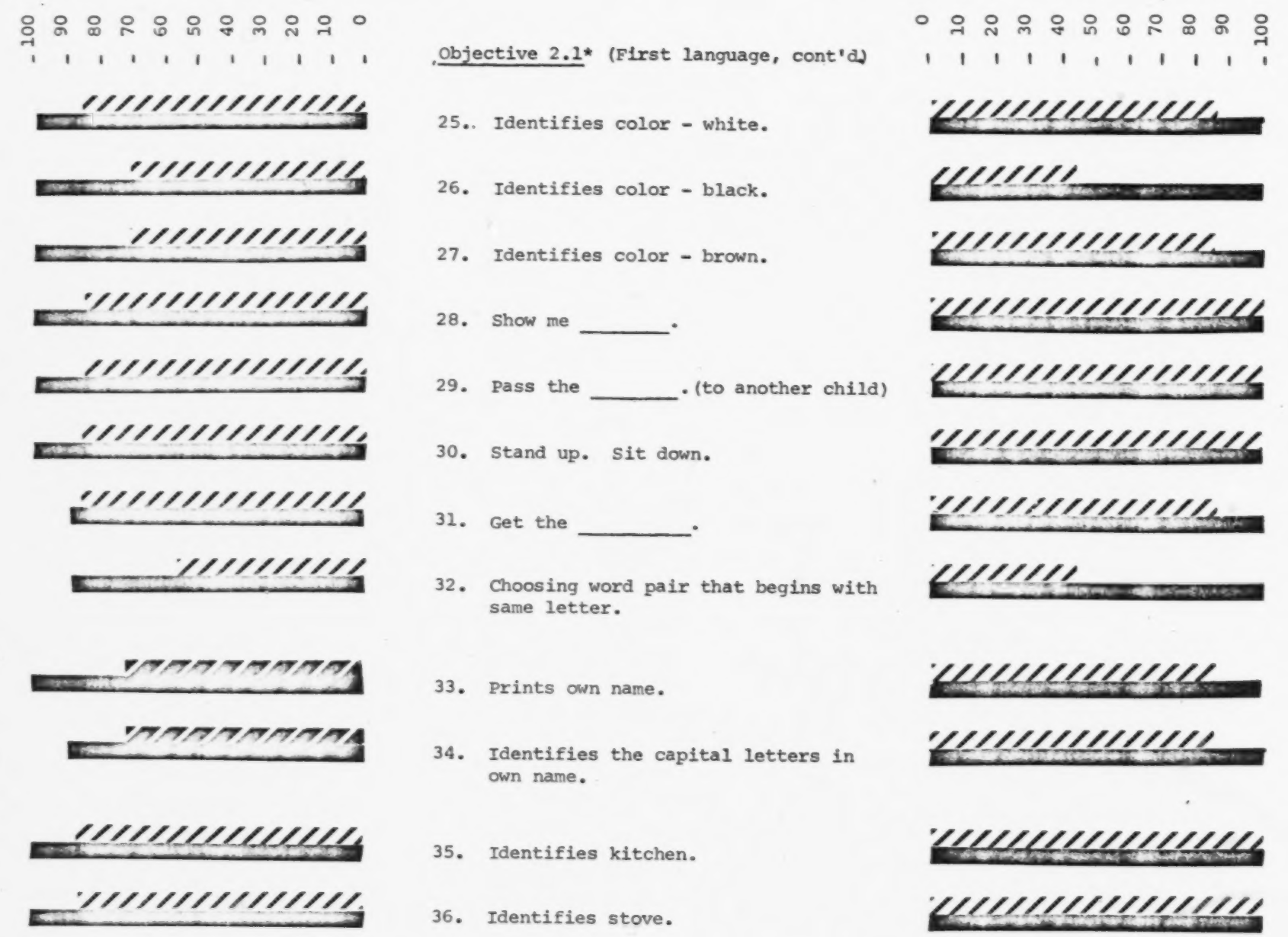

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1* (First language, cont'd)
25. Identifies color - white.
26. Identifies color - black.
27. Identifies color - brown.
28. Show me _____.
29. Pass the _____.(to another child)
30. Stand up. Sit down.
31. Get the _____.
32. Choosing word pair that begins with same letter.
33. Prints own name.
34. Identifies the capital letters in own name.
35. Identifies kitchen.
36. Identifies stove.

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 3

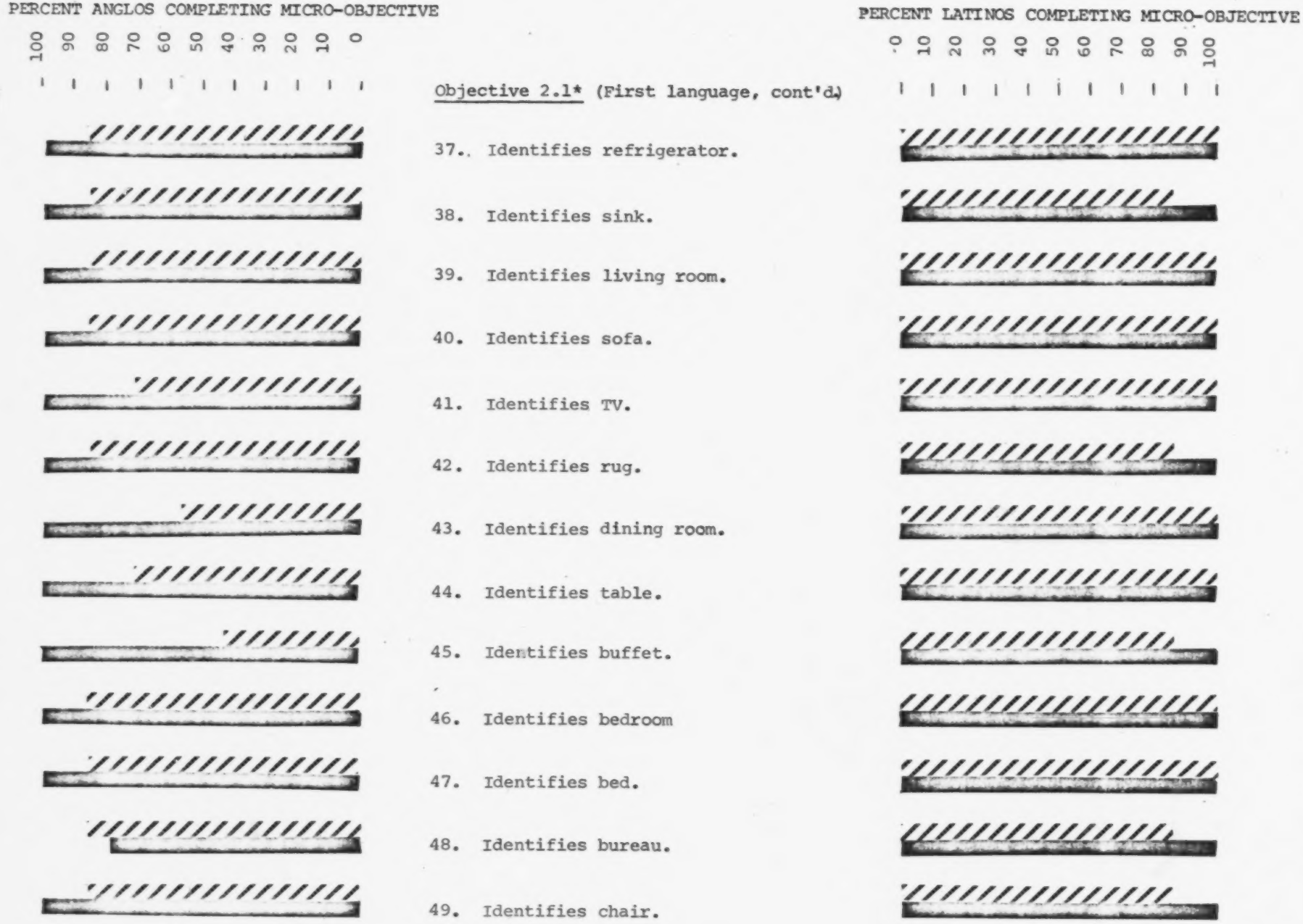

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1* (First language, cont'd)
37. Identifies refrigerator.
38. Identifies sink.
39. Identifies living room.
40. Identifies sofa.
41. Identifies TV.
42. Identifies rug.
43. Identifies dining room.
44. Identifies table.
45. Identifies buffet.
46. Identifies bedroom
47. Identifies bed.
48. Identifies bureau.
49. Identifies chair.

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 4

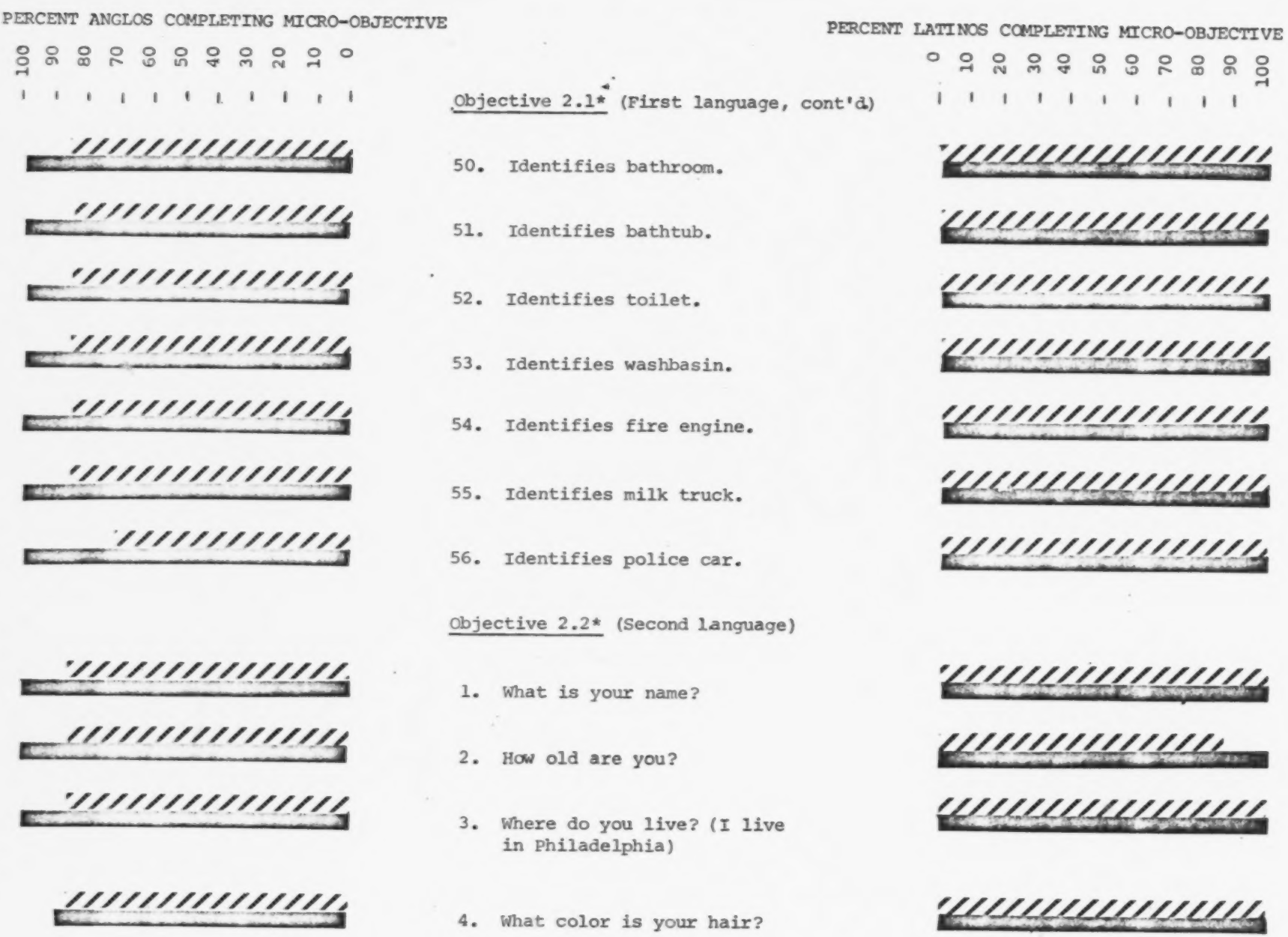

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.1* (First language, cont'd)
50. Identifies bathroom.
51. Identifies bathtub.
52. Identifies toilet.
53. Identifies washbasin.
54. Identifies fire engine.
55. Identifies milk truck.
56. Identifies police car.
Objective 2.2* (Second language)
1. What is your name?
2. How old are you?
3. Where do you live? (I live in Philadelphia)
4. What color is your hair?

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 5

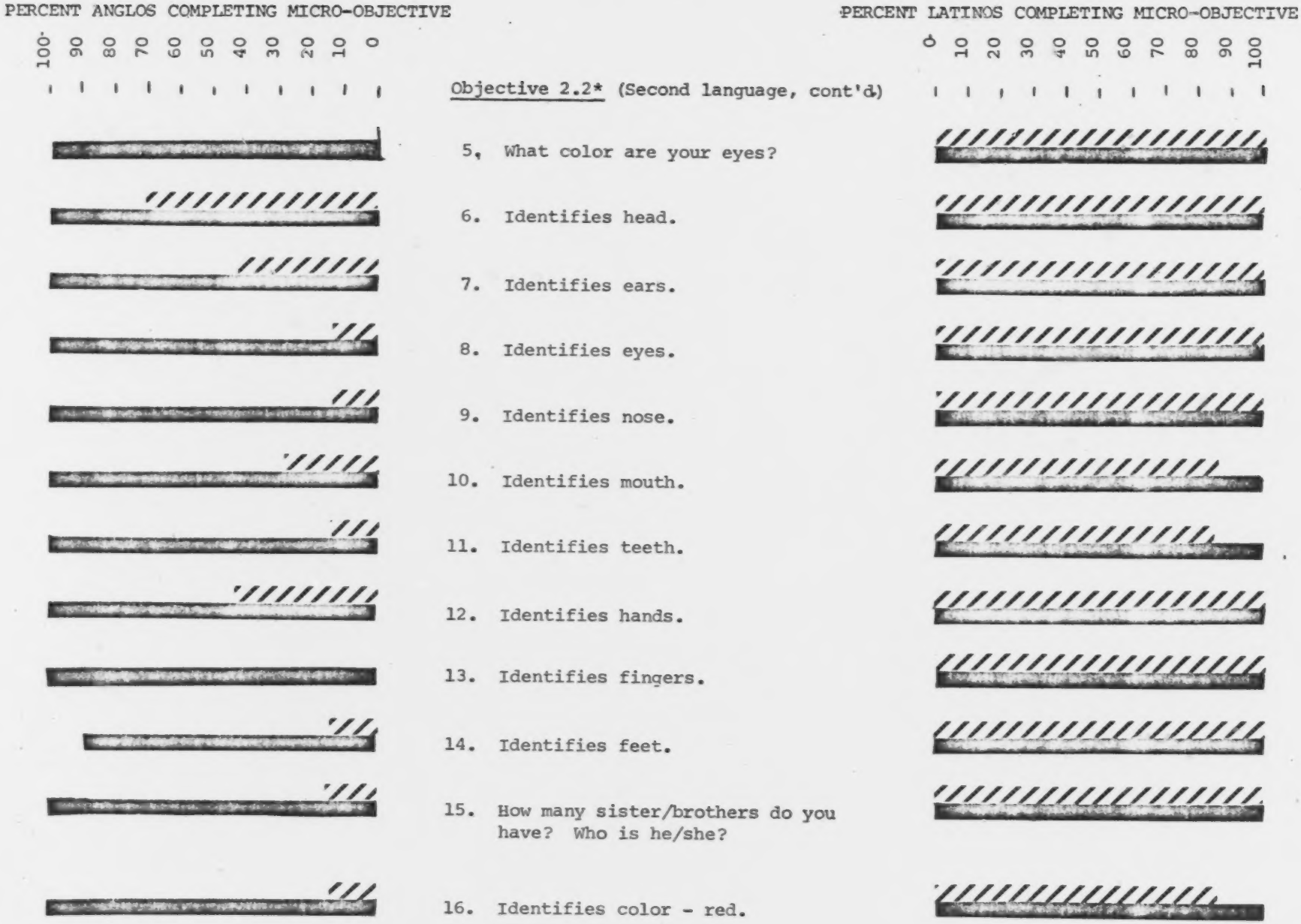

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.2* (Second language, cont'd)
5. What color are your eyes?
6. Identifies head.
7. Identifies ears.
8. Identifies eyes.
9. Identifies nose.
10. Identifies mouth.
11. Identifies teeth.
12. Identifies hands.
13. Identifies fingers.
14. Identifies feet.
15. How many sister/brothers do you have? Who is he/she?
16. Identifies color - red.

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 6

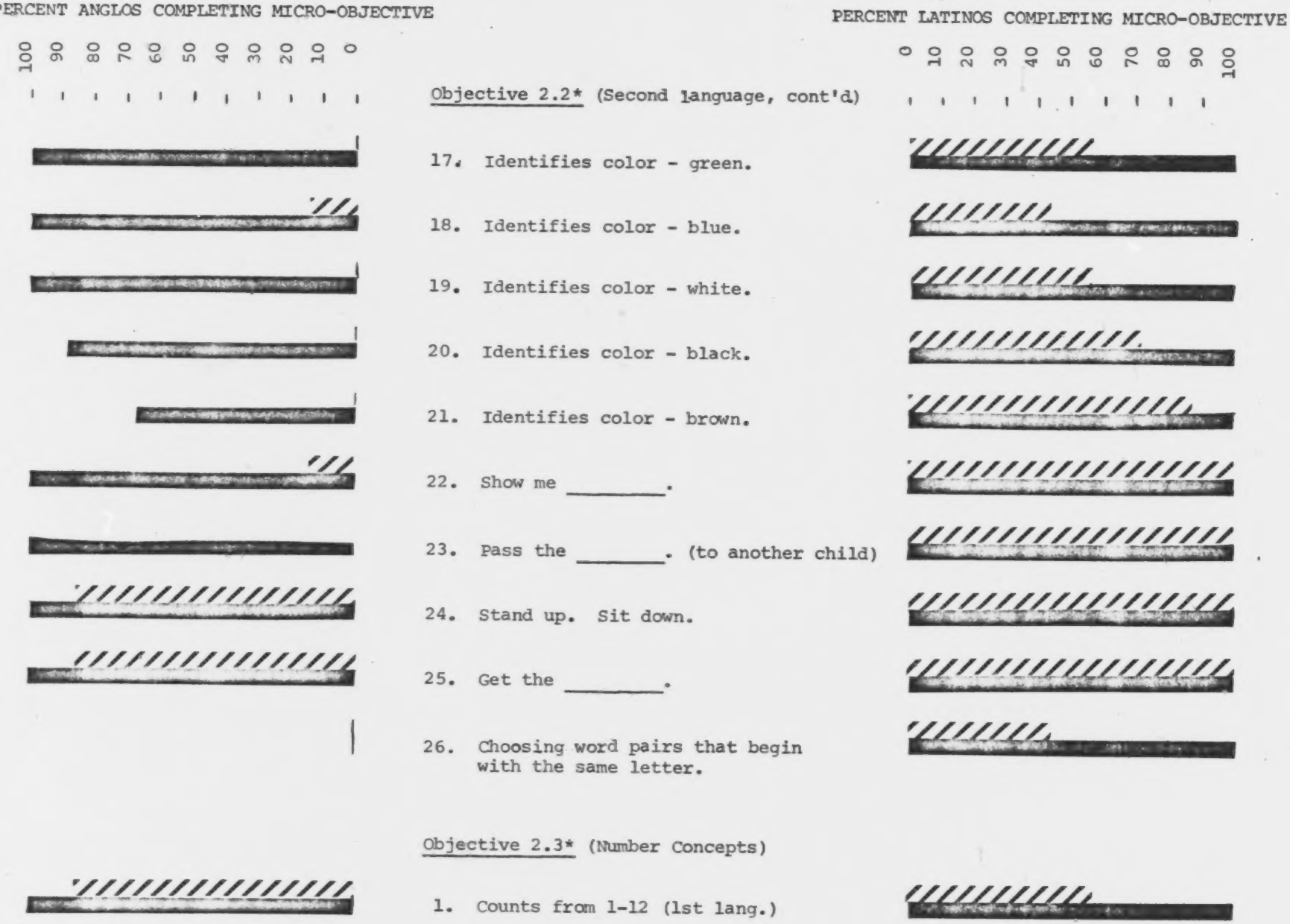

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.2* (Second language, cont'd)
17. Identifies color - green.
18. Identifies color - blue.
19. Identifies color - white.
20. Identifies color - black.
21. Identifies color - brown.
22. Show me _____.
23. Pass the _____. (to another child)
24. Stand up. Sit down.
25. Get the _____.
26. Choosing word pairs that begin with the same letter.
Objective 2.3* (Number Concepts)
1. Counts from 1-12 (1st lang.)

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 7

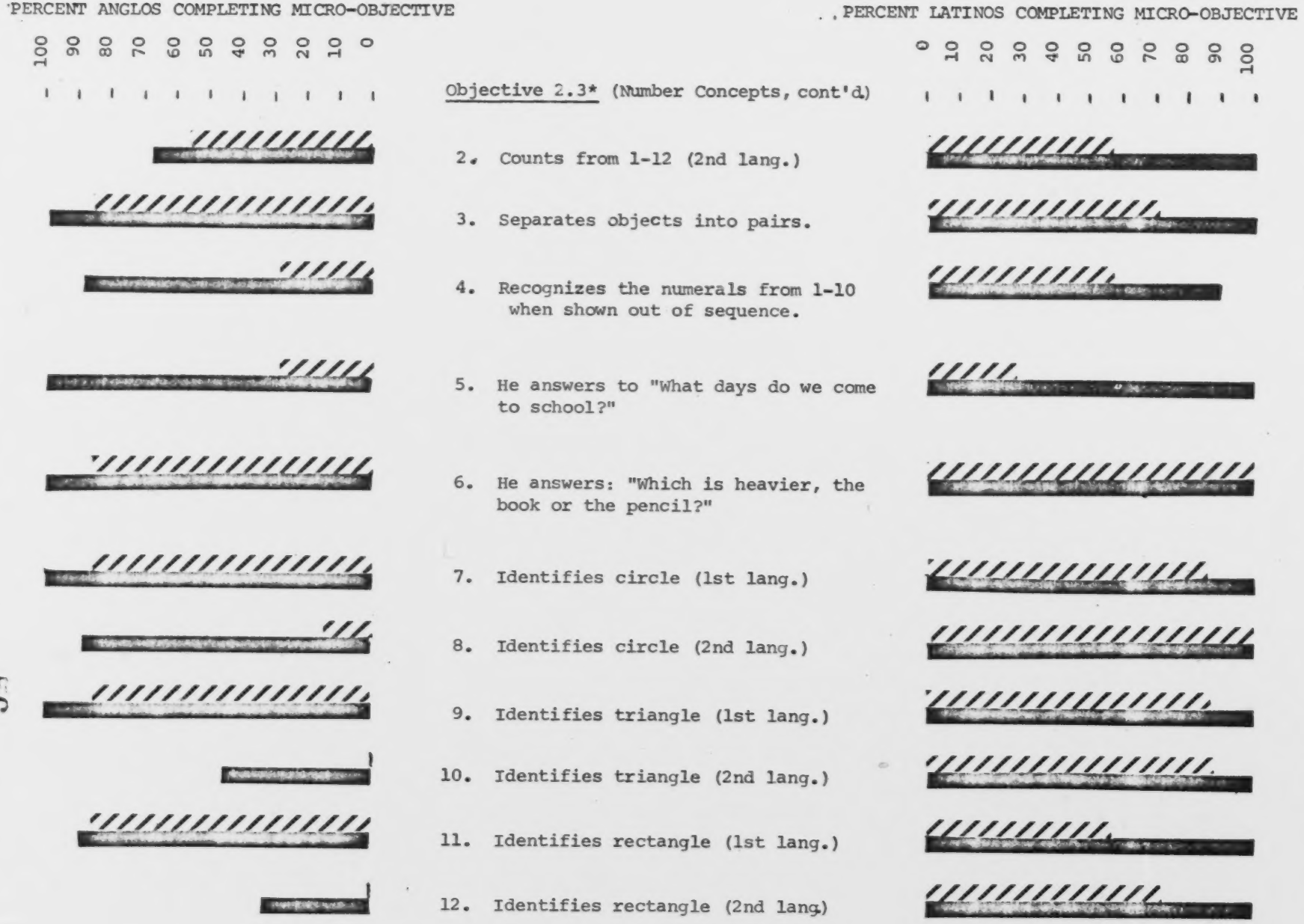

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.3* (Number Concepts, cont'd)
2. Counts from 1-12 (2nd lang.)
3. Separates objects into pairs.
4. Recognizes the numerals from 1-10 when shown out of sequence.
5. He answers to "What days do we come to school?"
6. He answers: "Which is heavier, the book or the pencil?"
7. Identifies circle (1st lang.)
8. Identifies circle (2nd lang.)
9. Identifies triangle (1st lang.)
10. Identifies triangle (2nd lang.)
11. Identifies rectangle (1st lang.)
12. Identifies rectangle (2nd lang)

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 8

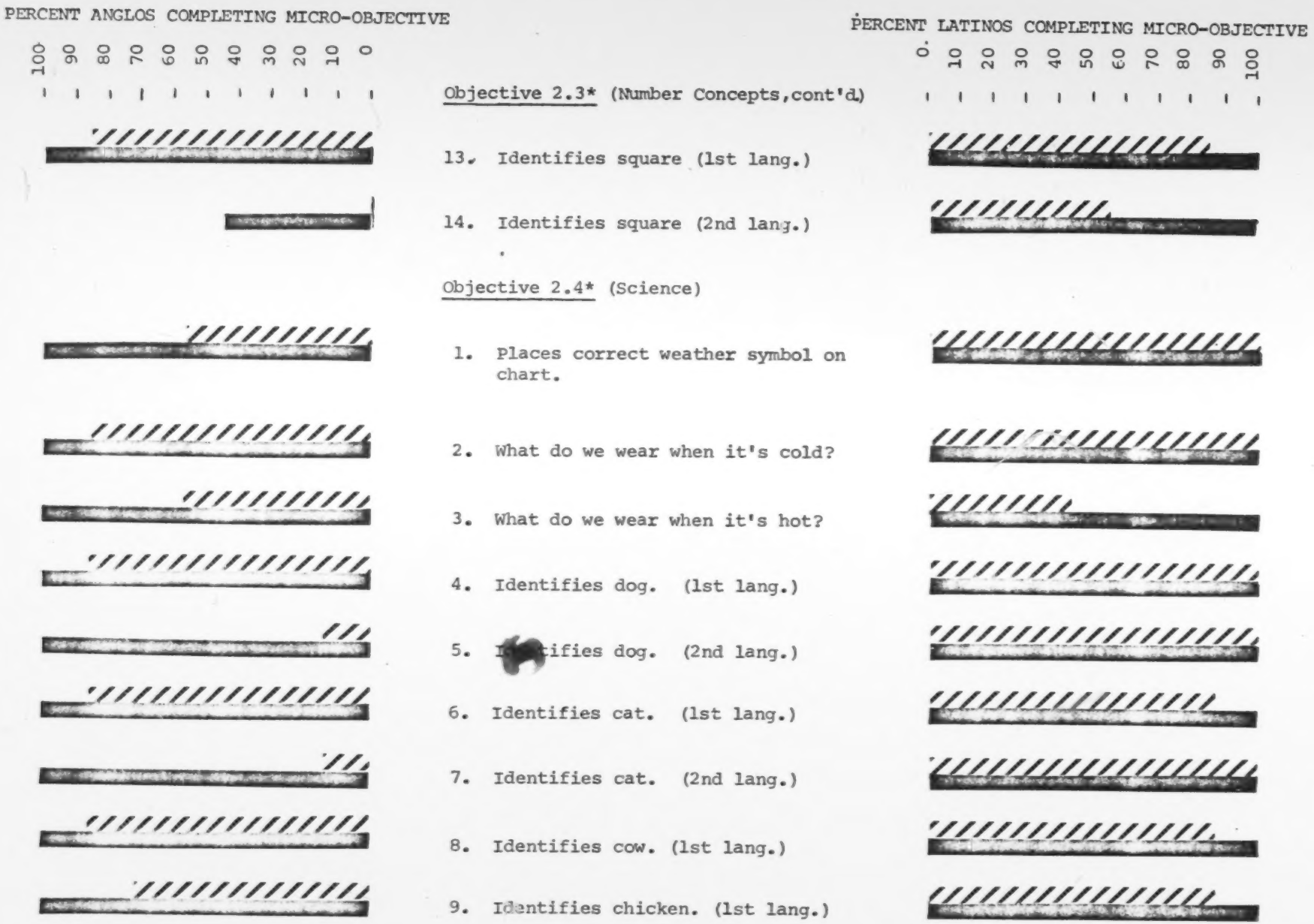

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0. 10 20 30 40 50 60 70 80 90 100
Objective 2.3* (Number Concepts,cont'd)
13. Identifies square (1st lang.)
14. Identifies square (2nd lang.)
Objective 2.4* (Science)
1. Places correct weather symbol on chart.
2. What do we wear when it's cold?
3. What do we wear when it's hot?
4. Identifies dog. (1st lang.)
5. Identifies dog. (2nd lang.)
6. Identifies cat. (1st lang.)
7. Identifies cat. (2nd lang.)
8. Identifies cow. (1st lang.)
9. Identifies chicken. (1st lang.)

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 9

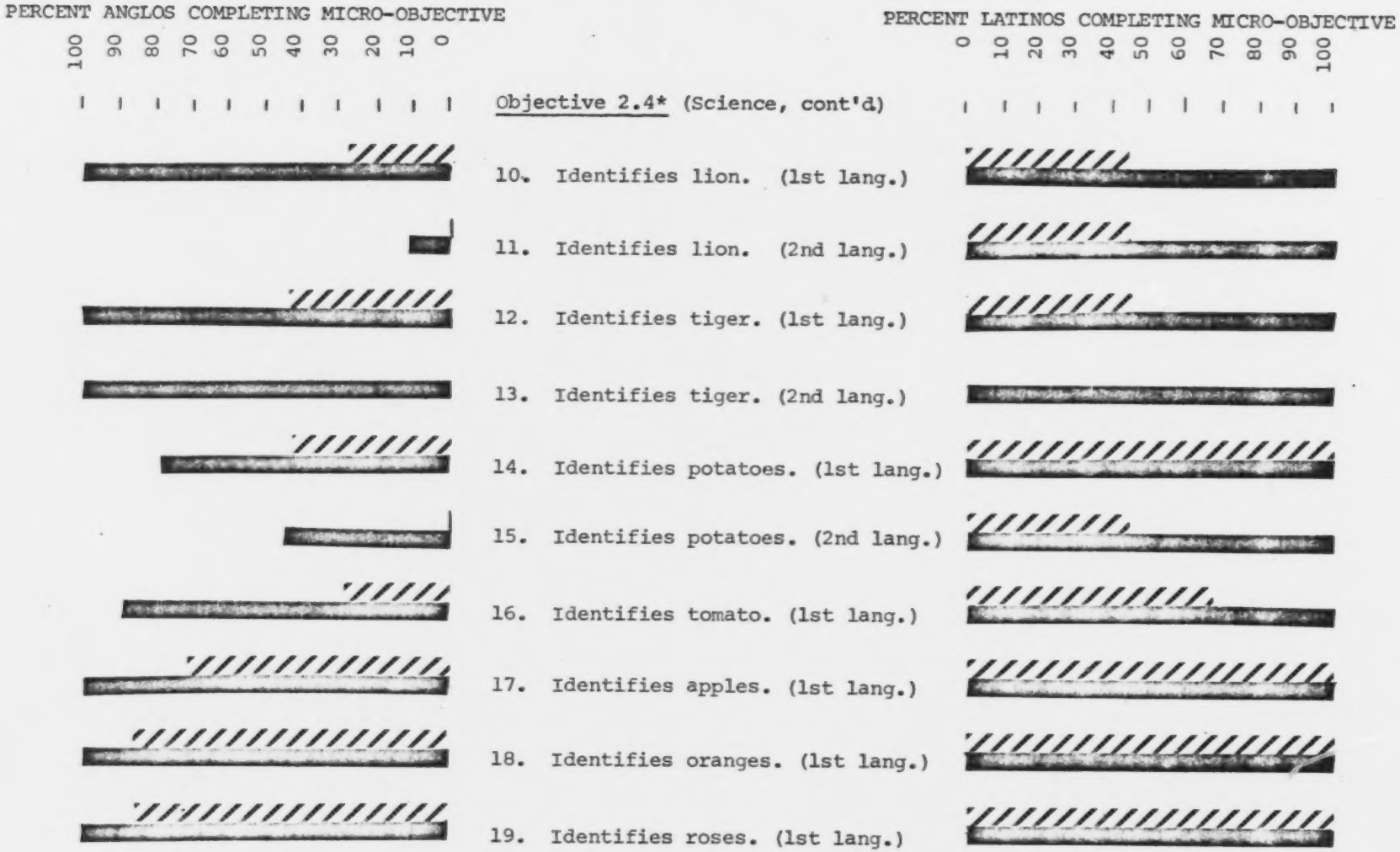

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 2.4* (Science, cont'd)
10. Identifies lion. (1st lang.)
11. Identifies lion. (2nd lang.)
12. Identifies tiger. (1st lang.)
13. Identifies tiger. (2nd lang.)
14. Identifies potatoes. (1st lang.)
15. Identifies potatoes. (2nd lang.)
16. Identifies tomato. (1st lang.)
17. Identifies apples. (1st lang.)
18. Identifies oranges. (1st lang.)
19. Identifies roses. (1st lang.)

FIGURE 2.3 PERCENTAGE OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 10

94.4% of the Anglos, who were expected to show 80% mastery were able to carry out each second-language micro-objective. Latino pupils observed at year-end were expected to have a mean of 90% of the pupils able to complete the micro-objectives. Their rate was 100% -- every Latino pupil observed could complete every second-language micro-objective. Examination of the mid-year data is instructive. Anglo pupils showed a low mastery rate of 37.9%, indicating that most growth occurred during the second half of the school year. In contrast, Latinos at mid-year showed 88.5% mastery which was nearly at the year-end criterion.

The third objective, number skills (2.3*) was exceeded at year-end by Latino pupils, 99.2% of whom mastered the typical micro-objective. Anglos were slightly below the 90% criterion, averaging 82.7%. When the individual micro-objectives are examined, one sees that the Anglo performance was degraded by relatively lower levels of performance on micro-objectives which required the pupils to name geometric shapes in their second language.

Findings of the examination of all-day kindergarten pupils on the science objective 2.4* have a pattern similar to that found on the number concepts objective: All Latino pupils could complete all micro-objectives, but Anglo pupils fell a bit short of the 90% criterion. Examination of the individual micro-objective shows that the difference lies primarily in performance of the few second language skills, which are easy for Latinos, but difficult for Anglos.

Table 2.4 Performance of First-Grade Pupils in the Model A and B Program on Micro-Objectives: Mean for Each Objective

Objective:	Mean Percent of Pupils Completing the Micro-Objectives (20 Anglos and 22 Latinos were observed at mid-year, and 17 Anglos and 36 Latinos at year-end)					
	Year-end Criteria		Mid-year Performance		Year-end Performance	
	Anglo	Latino	Anglo	Latino	Anglo	Latino
3.1 First Language	90%	90%	81.4%	84.0%	90.0%	89.0%
3.2 Second Language	80%	90%	6.6%	43.5%	33.2%	66.8%
3.3 Number Conc.	90%	90%	46.0%	50.6%	60.4%	75.0%
3.4 Science	90%	90%	29.0%	66.7%	43.8%	72.6%
3.7 Pre Reading, Reading and writing	*	*	28.0%	72.5%	57.4%	75.9%

* Performance criteria were stated for the first language micro-objectives only. (Numbers 1, 3, 4, 5, 7, and 9). They were 90% of the pupils able to perform the typical micro-objective. The mean of these objectives at year-end was 72.2 for Anglos and 78.6 for Latinos.

First Grade

Performance of first grade pupils on the five objectives which were built of micro-objectives is shown on Table 2.4 and Figure 2.4.

Objective 3.1. As can be seen on the Table, the first language year-end performance of both Anglo and Latino pupils was just that predicted in the proposal, 90%.

Objective 3.2. Performance of both Anglo and Latino pupils in second language objective (3.2) was poorer than had been anticipated. Anglos had a mean of 33.2% where 80% had been anticipated. Latinos had a mean of 66.8% where 90% had been anticipated. Among the Anglos, the relatively poor performance seemed to center on Spanish reporting of one's address and naming colors. Among Latinos there was no clear pattern as to where the difficulty was found.

Objective 3.3. The performance of first-grade pupils on the Number Concept objective was below the level anticipated, with Anglos having a mean percent of 60.4 and Latinos a mean percent of 75.0 where 90% was anticipated. Counting to high values, identifying liquid measures and some micro-objectives in the second language seemed to be troublesome for the pupils. It is interesting to note that most Anglo pupils observed seemed to have forgotten one skill; they could count to 100 in Spanish at mid-year, but not at year-end. This might be due to sampling.

Objective 3.4. Pupil performance was also below anticipated on the science micro-objectives. Anglos averaging 43.8% at year-end and Latinos averaging 72.6%. The Anglo performance, once again, was degraded by difficulty with second language micro-objectives. This also was a problem for the Latinos but to a lesser extent.

Objective 3.7. The reading and writing objective in the first-grade contained two sets of micro-objectives. Six 1, 3, 4, 5, 7, and 9 in the mother tongue had a criterion of 90%. The samples observed at year-end showed that neither Anglo nor Latino pupils were quite up to this level, averaging 72.7% and 78.6% respectively. The other micro-objectives for number 3.7 are in the pupil's second-language. Pupil performance was generally lower on these micro-objectives, with Anglos having more difficulty. When these micro-objectives are included, the mean performance in the pre-reading, reading and writing skills fall to 57.4% for Anglos and 75.9% for Latinos.

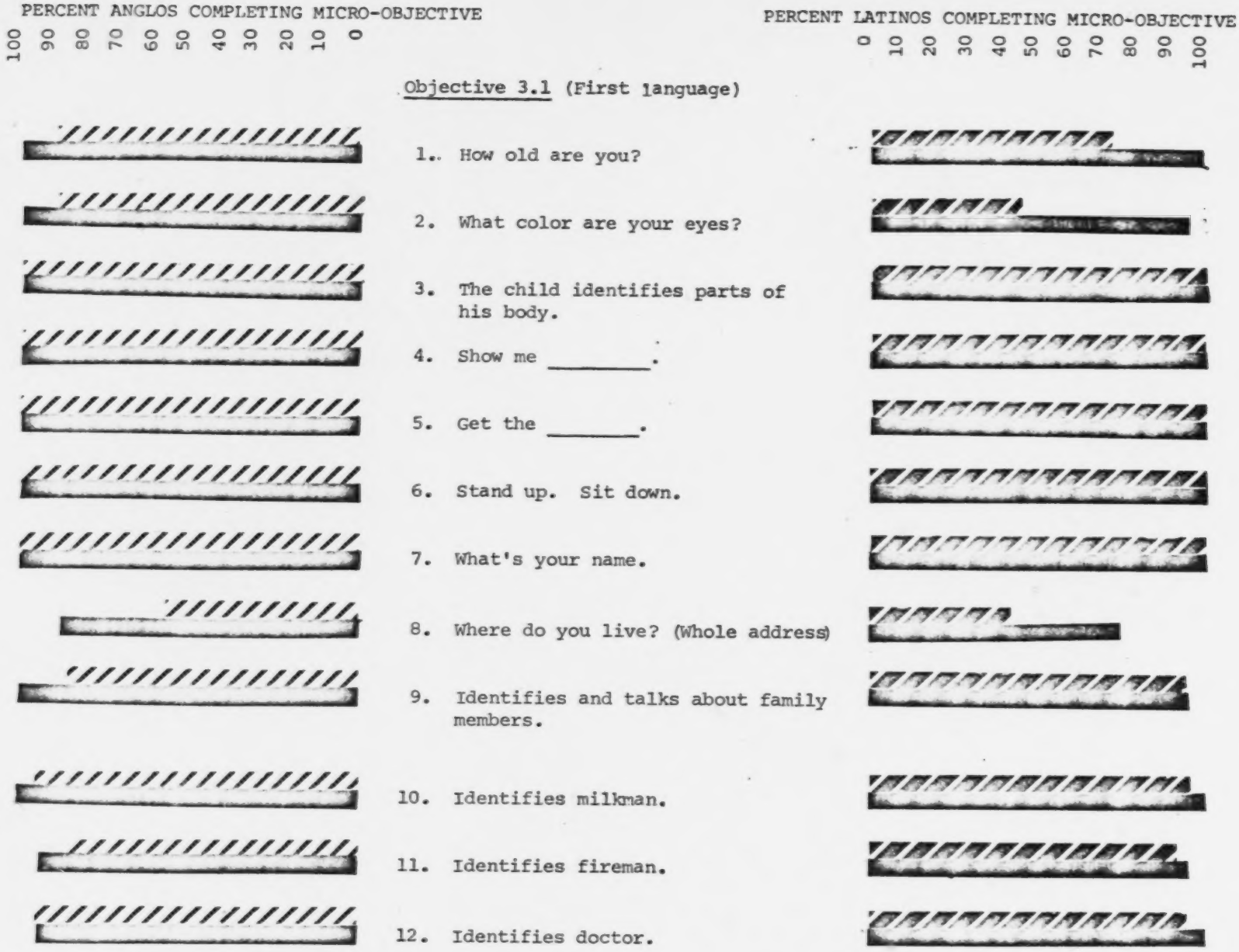

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.1 (First language)
1. How old are you?
2. What color are your eyes?
3. The child identifies parts of his body.
4. Show me _____.
5. Get the _____.
6. Stand up. Sit down.
7. What's your name.
8. Where do you live? (Whole address)
9. Identifies and talks about family members.
10. Identifies milkman.
11. Identifies fireman.
12. Identifies doctor.
Key: Mid-year Year-end

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 1

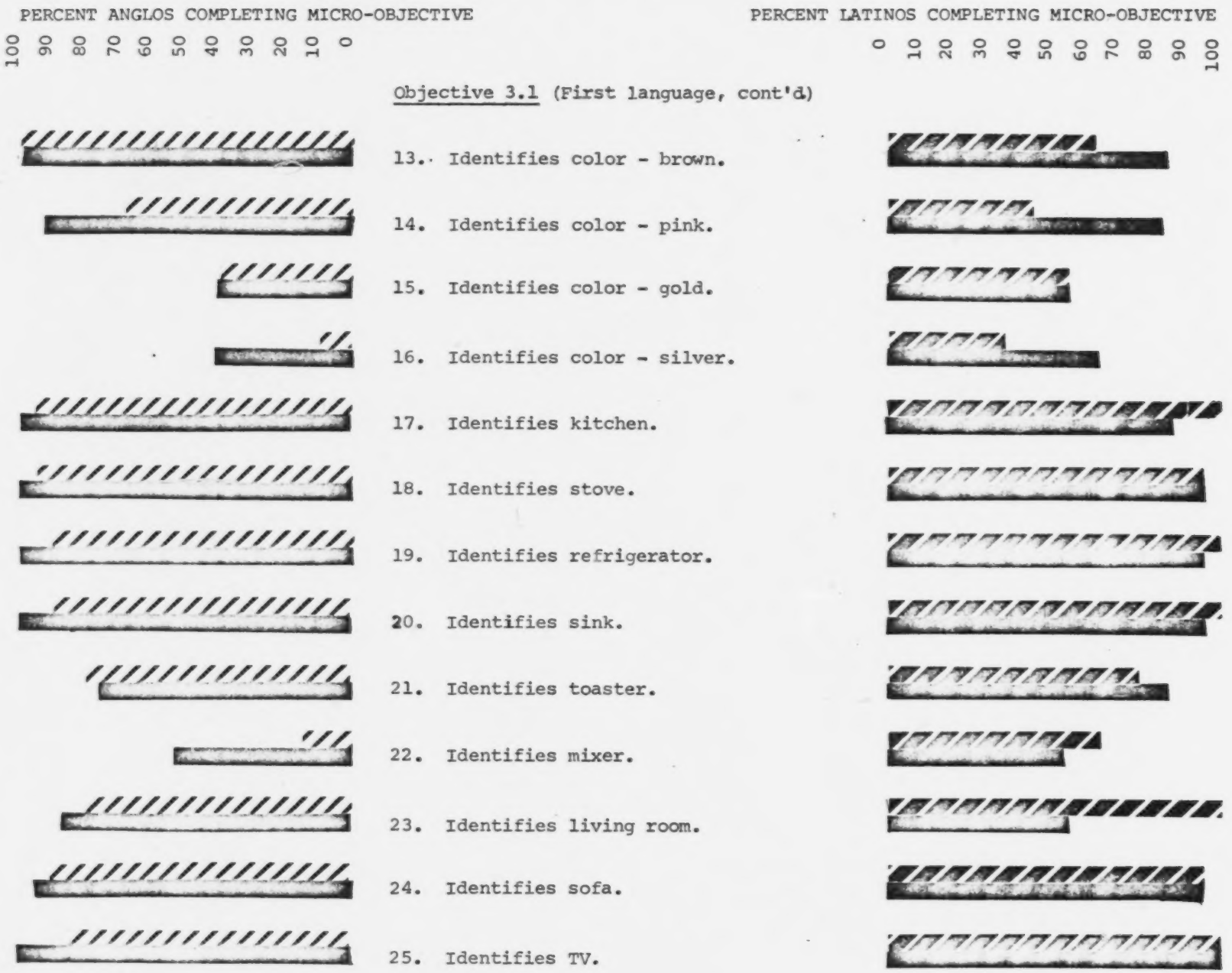

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.1 (First language, cont'd)
13. Identifies color - brown.
14. Identifies color - pink.
15. Identifies color - gold.
16. Identifies color - silver.
17. Identifies kitchen.
18. Identifies stove.
19. Identifies refrigerator.
20. Identifies sink.
21. Identifies toaster.
22. Identifies mixer.
23. Identifies living room.
24. Identifies sofa.
25. Identifies TV.

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 2

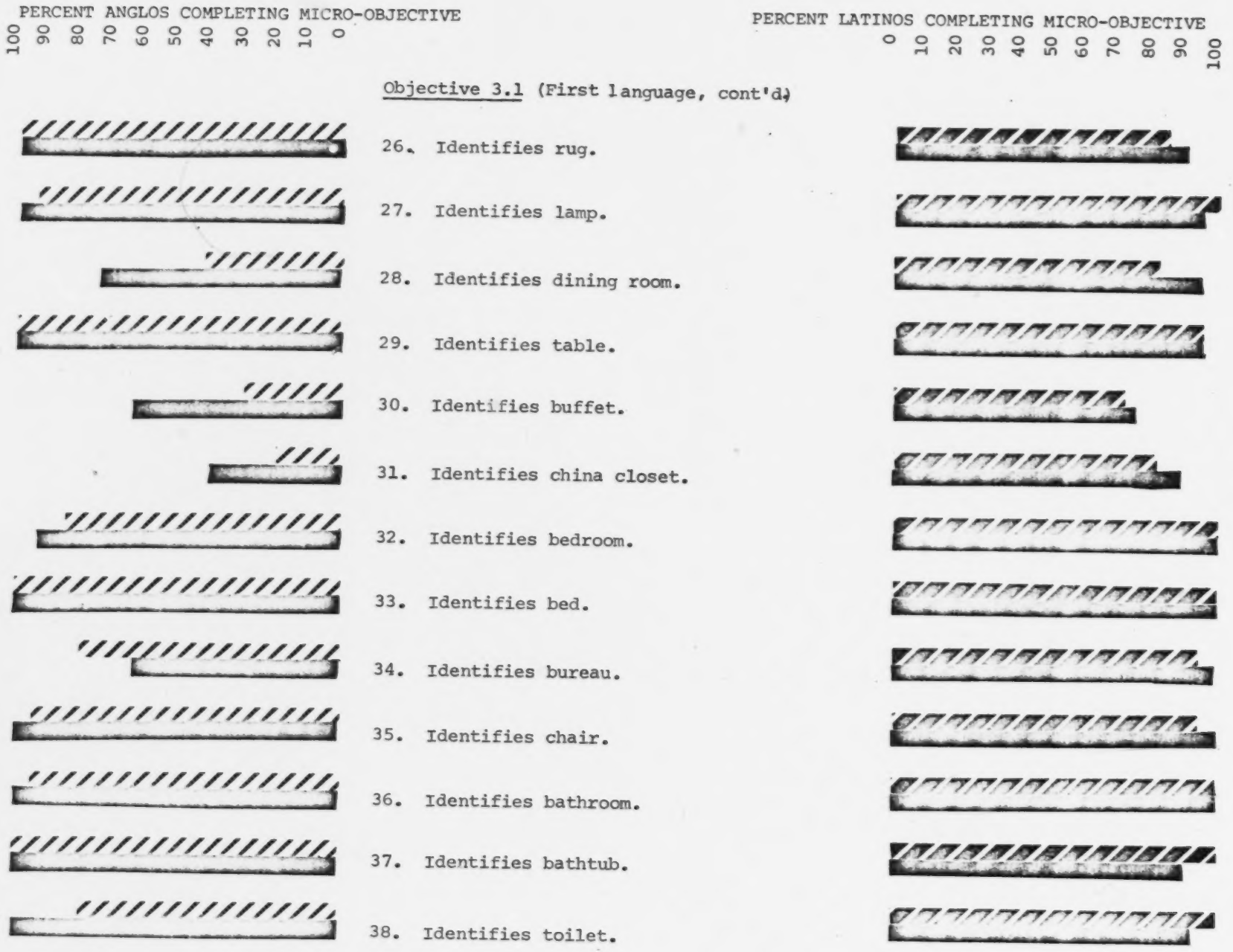

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.1 (First language, cont'd)
26. Identifies rug.
27. Identifies lamp.
28. Identifies dining room.
29. Identifies table.
30. Identifies buffet.
31. Identifies china closet.
32. Identifies bedroom.
33. Identifies bed.
34. Identifies bureau.
35. Identifies chair.
36. Identifies bathroom.
37. Identifies bathtub.
38. Identifies toilet.

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 3

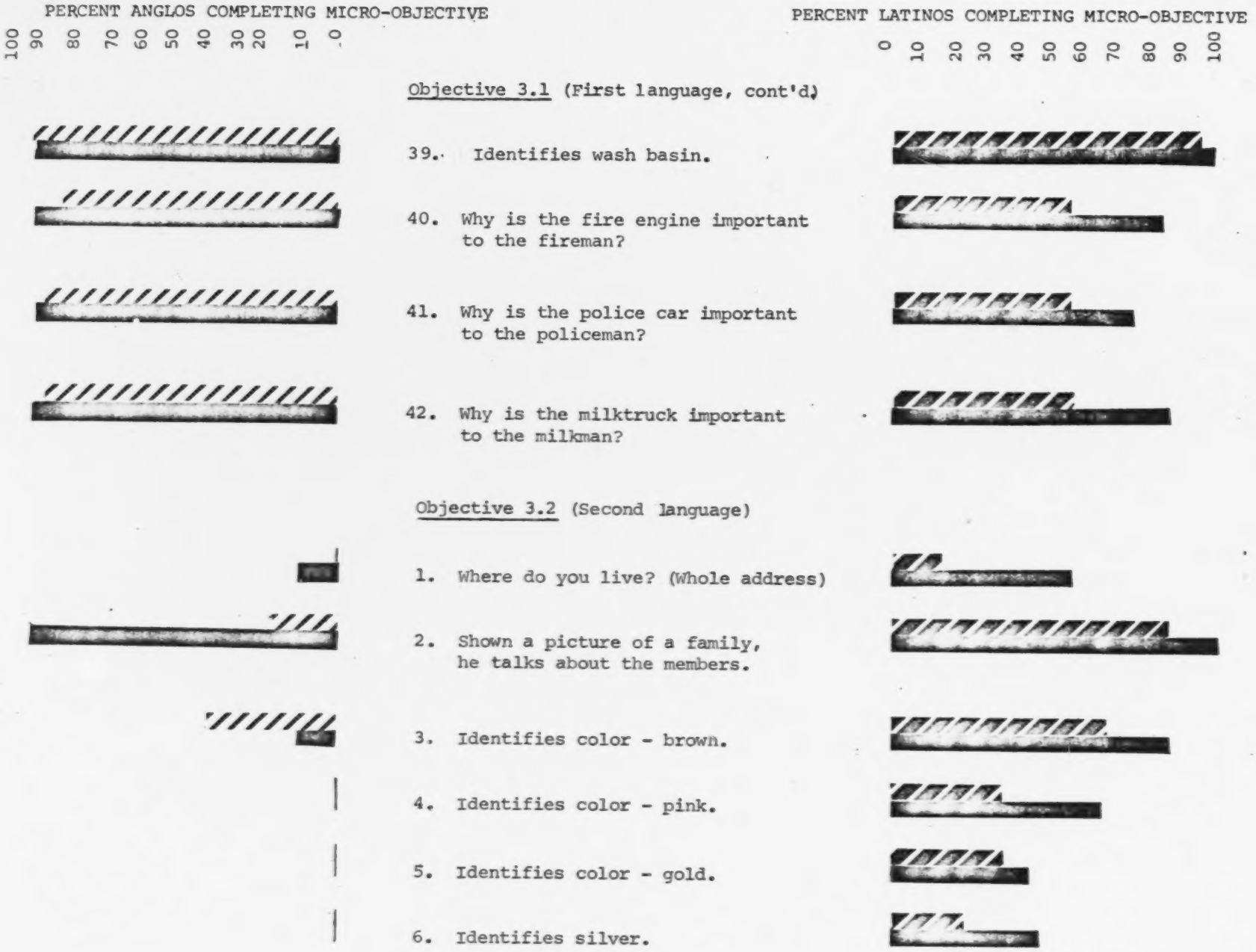

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.1 (First language, cont'd)
39. Identifies wash basin.
40. Why is the fire engine important to the fireman?
41. Why is the police car important to the policeman?
42. Why is the milktruck important to the milkman?
Objective 3.2 (Second language)
1. Where do you live? (Whole address)
2. Shown a picture of a family, he talks about the members.
3. Identifies color - brown.
4. Identifies color - pink.
5. Identifies color - gold.
6. Identifies silver.

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 4

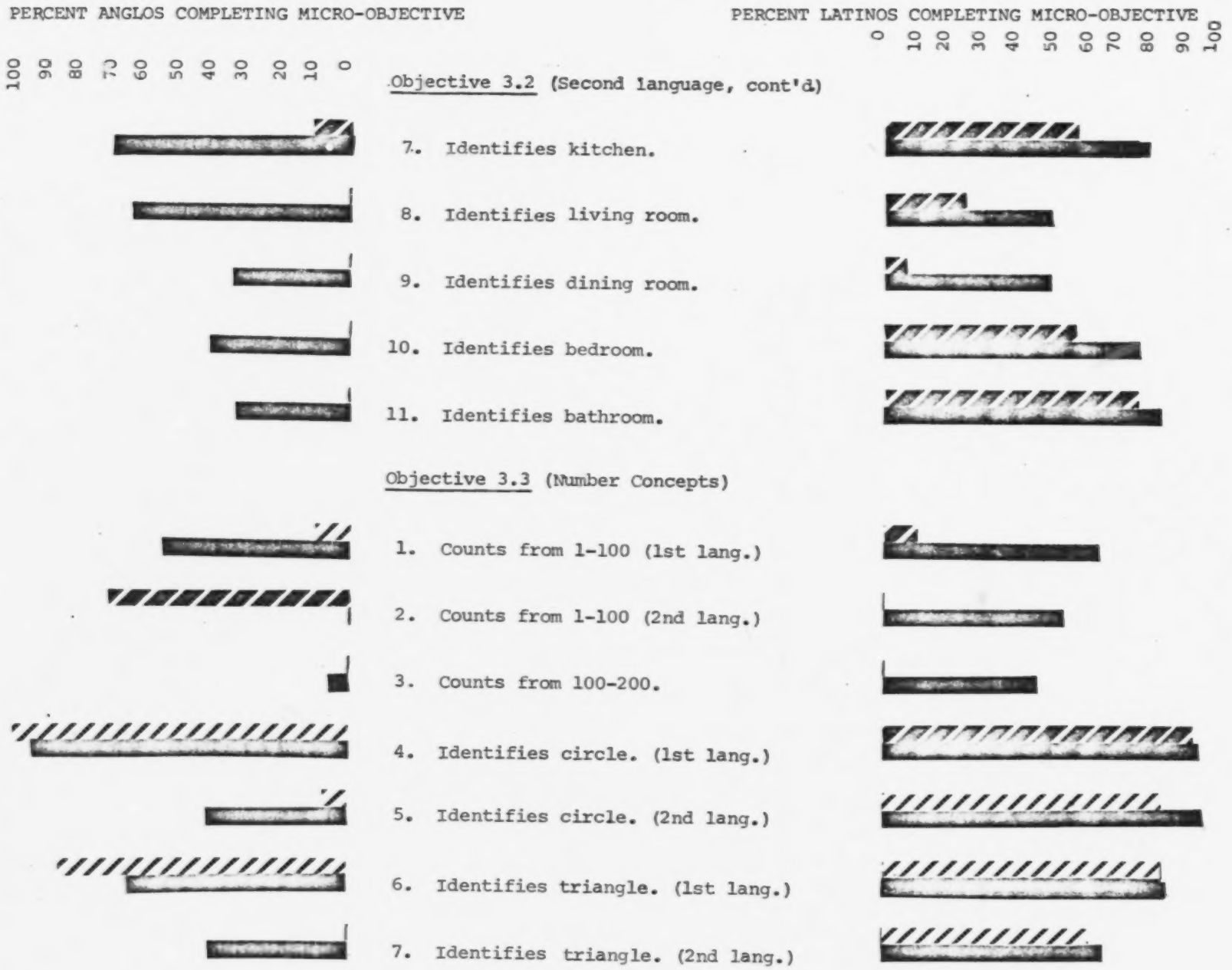

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.2 (Second language, cont'd)
7. Identifies kitchen.
8. Identifies living room.
9. Identifies dining room.
10. Identifies bedroom.
11. Identifies bathroom.
Objective 3.3 (Number Concepts)
1. Counts from 1-100 (1st lang.)
2. Counts from 1-100 (2nd lang.)
3. Counts from 100-200.
4. Identifies circle. (1st lang.)
5. Identifies circle. (2nd lang.)
6. Identifies triangle. (1st lang.)
7. Identifies triangle. (2nd lang.)

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 5

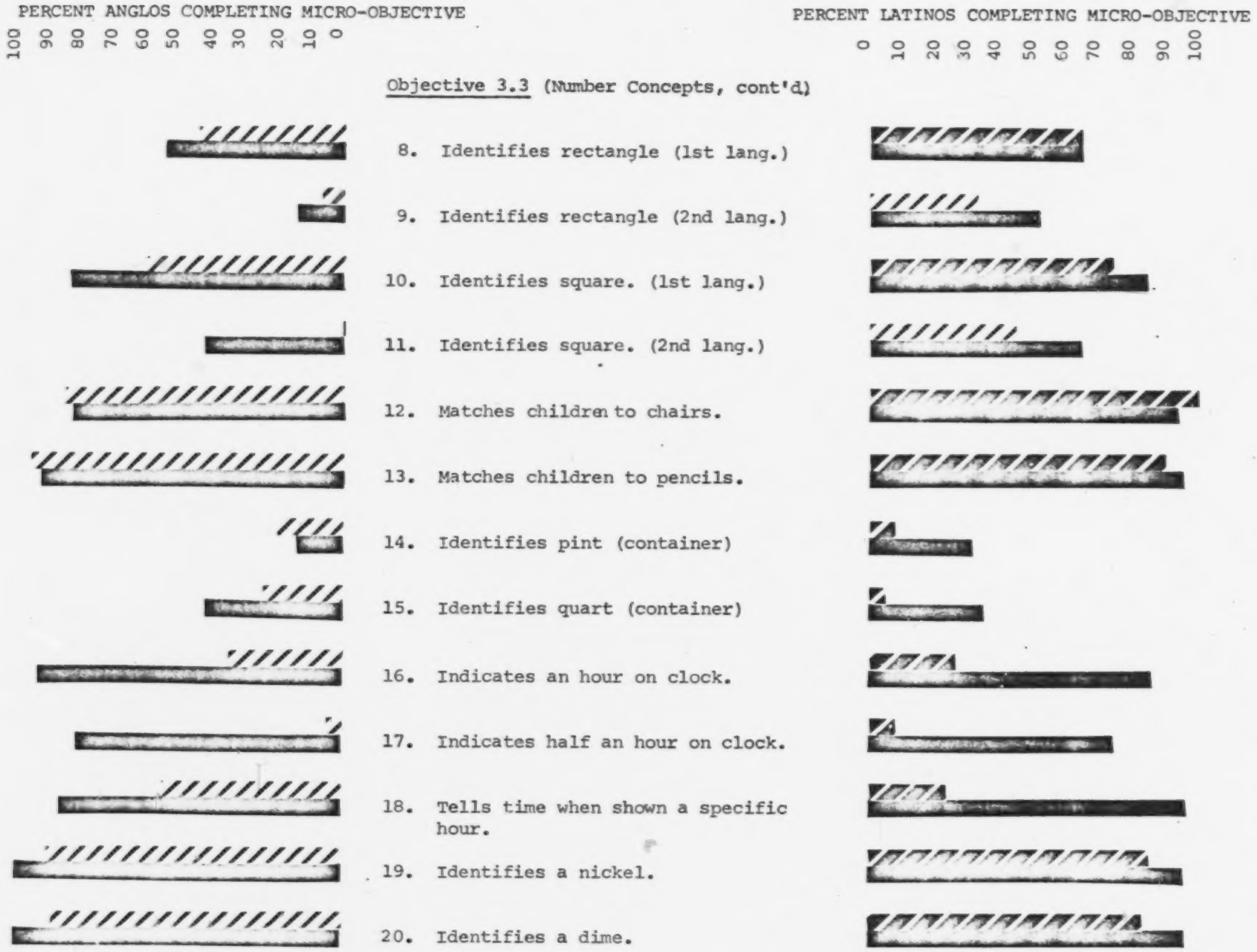

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.3 (Number Concepts, cont'd)
8. Identifies rectangle (1st lang.)
9. Identifies rectangle (2nd lang.)
10. Identifies square. (1st lang.)
11. Identifies square. (2nd lang.)
12. Matches children to chairs.
13. Matches children to pencils.
14. Identifies pint (container)
15. Identifies quart (container)
16. Indicates an hour on clock.
17. Indicates half an hour on clock.
18. Tells time when shown a specific hour.
19. Identifies a nickel.
20. Identifies a dime.

FIGURE 2.4 PERCENT OF FIRST GRADE THAT OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 6

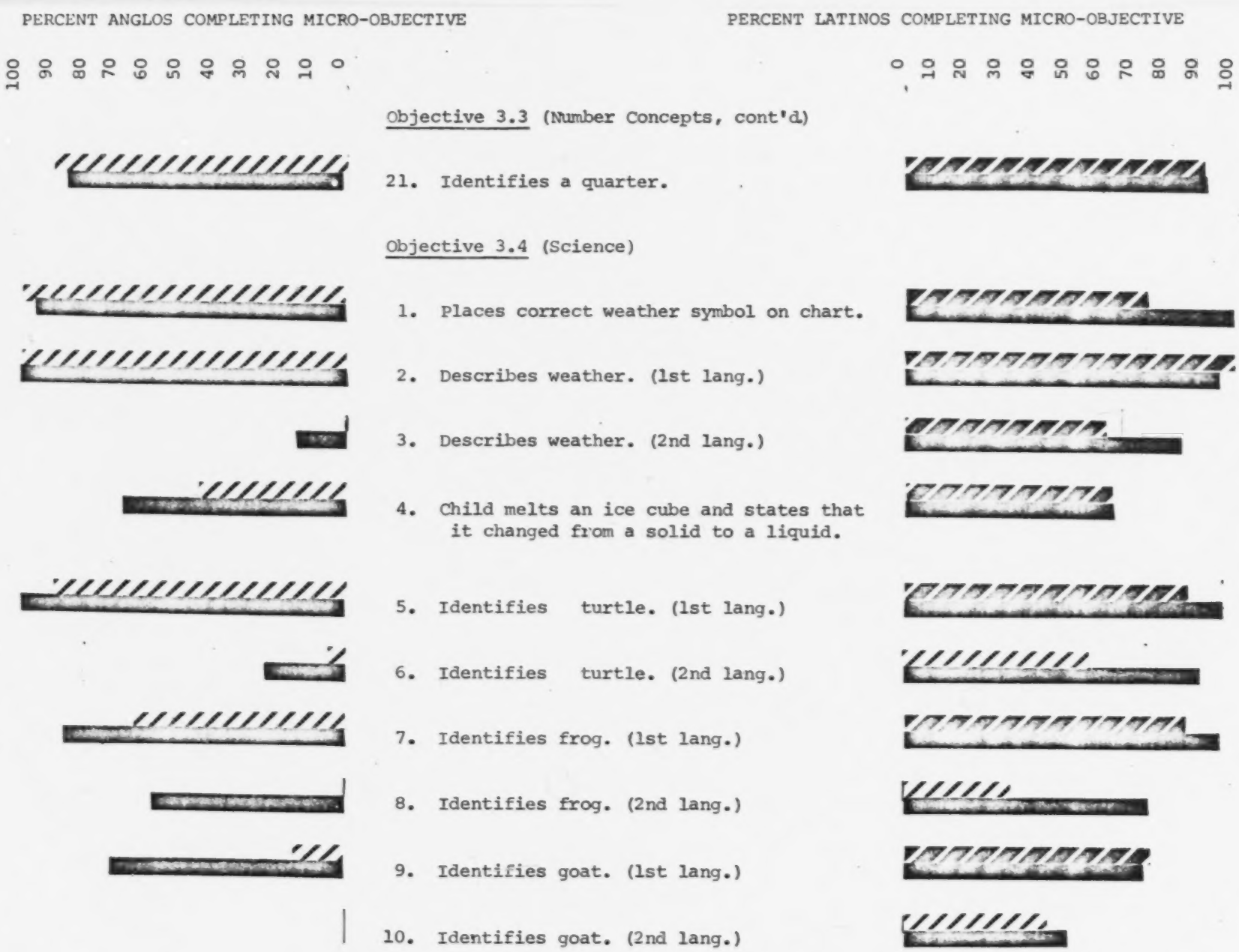

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.3 (Number Concepts, cont'd)
21. Identifies a quarter.
Objective 3.4 (Science)
1. Places correct weather symbol on chart.
2. Describes weather. (1st lang.)
3. Describes weather. (2nd lang.)
4. Child melts an ice cube and states that it changed from a solid to a liquid.
5. Identifies turtle. (1st lang.)
6. Identifies turtle. (2nd lang.)
7. Identifies frog. (1st lang.)
8. Identifies frog. (2nd lang.)
9. Identifies goat. (1st lang.)
10. Identifies goat. (2nd lang.)

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 7

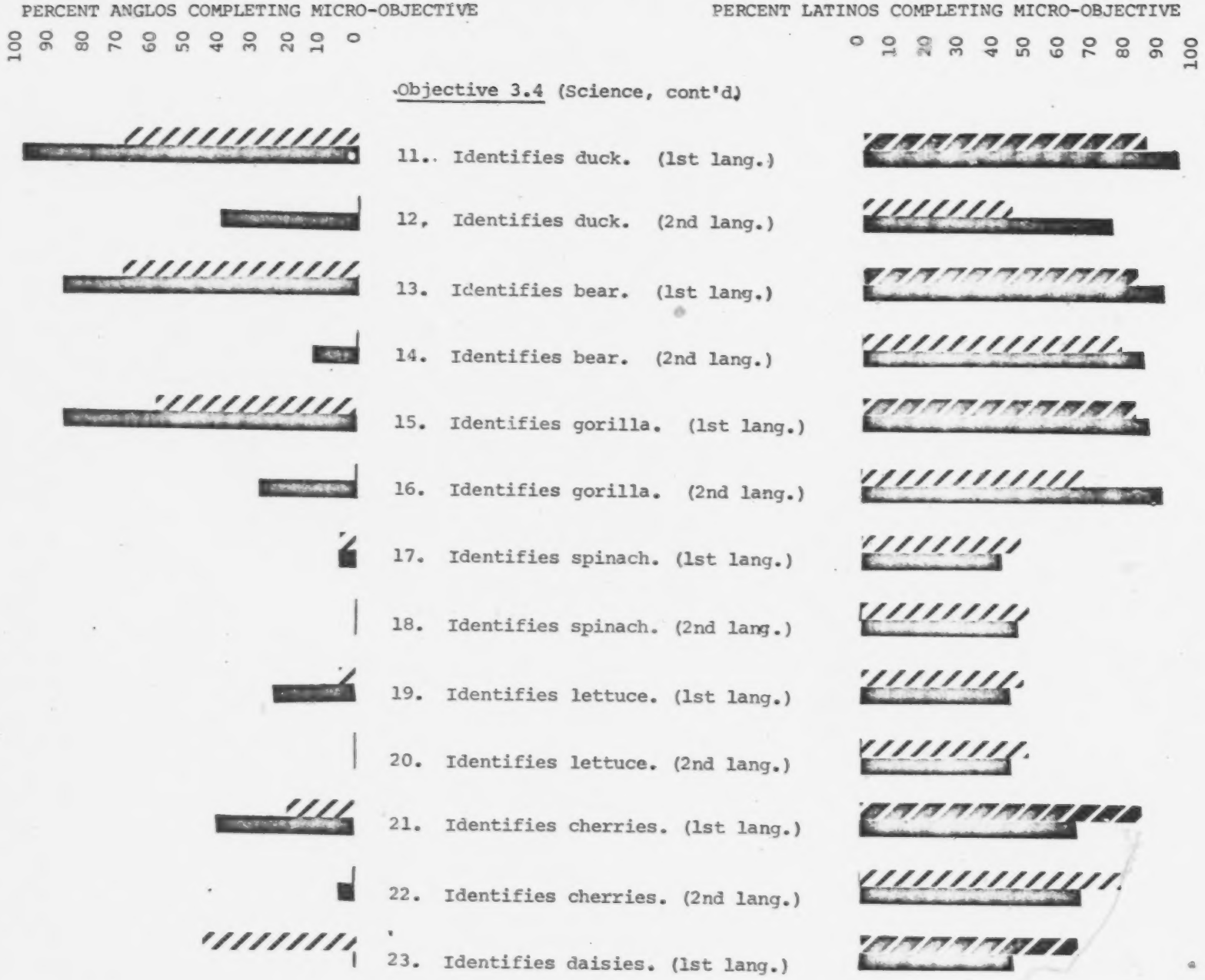

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.4 (Science, cont'd)
11. Identifies duck. (1st lang.)
12. Identifies duck. (2nd lang.)
13. Identifies bear. (1st lang.)
14. Identifies bear. (2nd lang.)
15. Identifies gorilla. (1st lang.)
16. Identifies gorilla. (2nd lang.)
17. Identifies spinach. (1st lang.)
18. Identifies spinach. (2nd lang.)
19. Identifies lettuce. (1st lang.)
20. Identifies lettuce. (2nd lang.)
21. Identifies cherries. (1st lang.)
22. Identifies cherries. (2nd lang.)
23. Identifies daisies. (1st lang.)

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 8

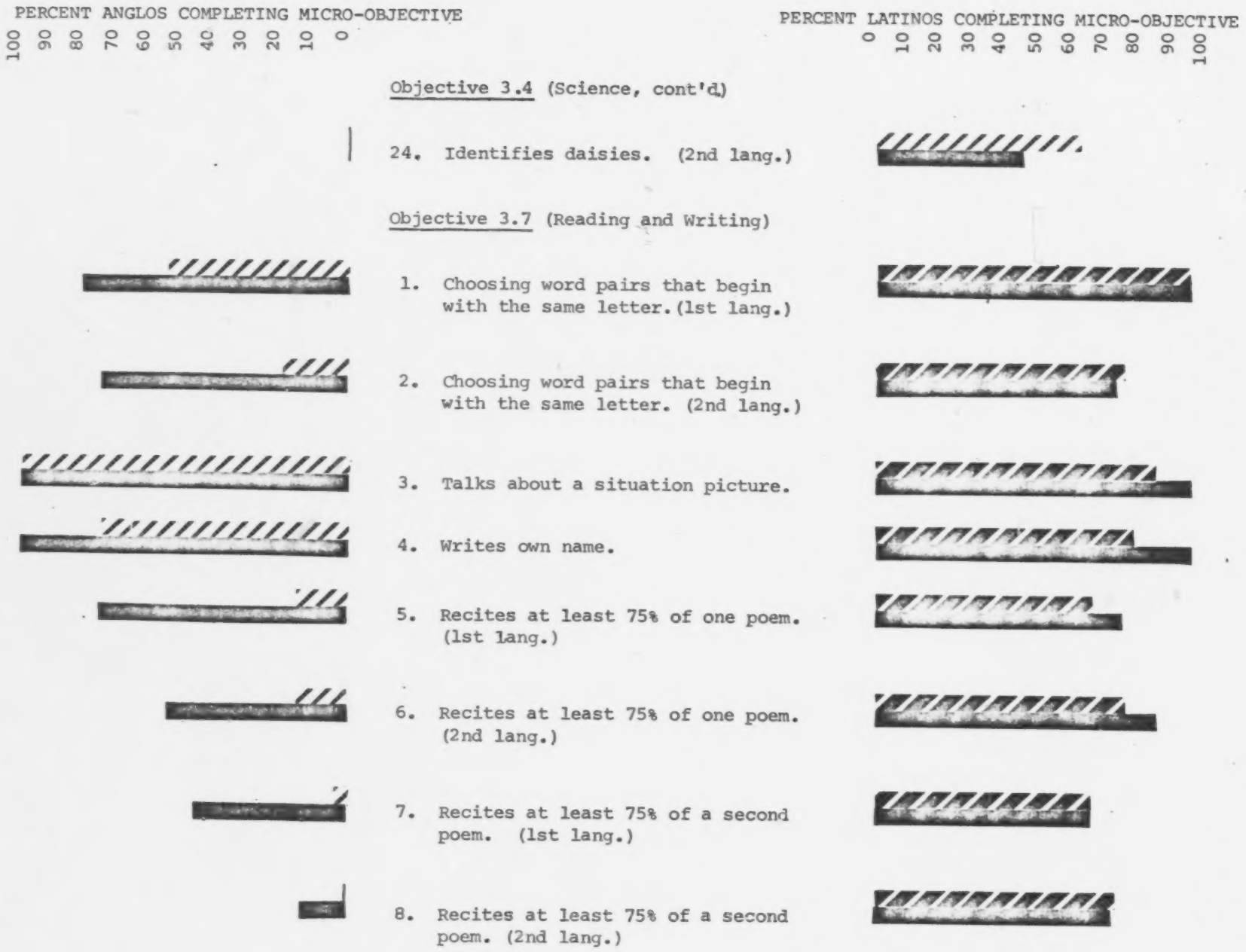

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.4 (Science, cont'd)
24. Identifies daisies. (2nd lang.)
Objective 3.7 (Reading and Writing)
1. Choosing word pairs that begin with the same letter.(1st lang.)
2. Choosing word pairs that begin with the same letter. (2nd lang.)
3. Talks about a situation picture.
4. Writes own name.
5. Recites at least 75% of one poem. (1st lang.)
6. Recites at least 75% of one poem. (2nd lang.)
7. Recites at least 75% of a second poem. (1st lang.)
8. Recites at least 75% of a second poem. (2nd lang.)

FIGURE 2.4 PERCENT OF FIRST GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 9

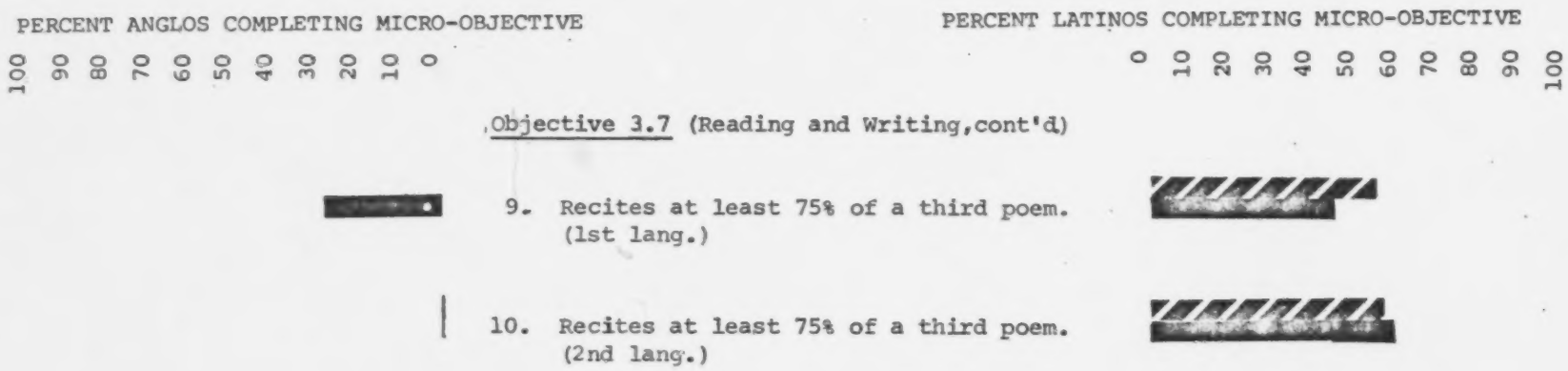

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 3.7 (Reading and Writing,cont'd)
9. Recites at least 75% of a third poem. (1st lang.)
10. Recites at least 75% of a third poem. (2nd lang.)

FIGURE 2.4 PERCENT OF FIRSTGRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 10

Second Grade

Results of the examination of second grade pupils are shown on Table 2.5 and Figure 2.5.

Objective 5.1, reading in the pupil's mother tongue, contained three first-language skills to be performed orally. (Most reading skills were examined in studies 5 and 6). The proposal did not include any performance criteria, but the data shows a very high level of performance by year and for both Anglos (who averaged 90%) and Latinos (who averaged 100%). It is interesting that Latino pupils examined at mid-year showed perfect performance, but Anglos grew from mid-year to the final examination.

Objective 5.2 required pupils to show that they had memorized three poems in their second language and three poems in their mother tongue. These poems were selected by the teacher from a list provided by the program staff. Results show that there was a substantial Anglo-Latino difference: more than 75% of the Anglos could recite two poems in their mother tongue and one in their second language, but only a few could recite more. It is interesting to note that there is some retrogression of performance from mid-year to year-end for the poems learned in the second language. This suggests that there has been some forgetting on the part of Anglos. Latinos performed better than Anglos, showing performance a little better than the criterion (78.3%). Here too the data suggests that there was forgetting of poetry learned early in the year.

Objective 5.3, writing in the first language, contained two micro-objectives. Pupil performance averaged 91.5% for Anglos and 94.0% for Latinos. Both groups, therefore, met the 90% criterion.

Objective 5.4, Spanish as a Second language, was designed for use with Anglo children only, and a criterion of 80%. Pupils did not quite read at this level at year-end; they averaged 76.0%. Examination of the micro-objectives suggests that pupils had greatest difficulty in micro-objectives which involved identifying some household items from their pictures.

The parallel objective for Latinos was Number 5.5, English as a Second Language. The Latino pupil performance overall was at about the same level, but, based on the previous year's experience, the criterion was higher (90%). Thus, the 70.6% mean of the Latinos was less than expected. While the selection varies somewhat, Latino pupils also seemed to have the most difficulty with household items.

It is noteworthy that pupils have some second language micro-objectives which show better performance at mid-year than at year-end (two micro-objectives for Anglos, seven micro-objectives for Latinos). This suggests that at least some of these language skills may not have been learned to the point where they became a permanent part of the pupil's repertory.

Objective 5.6, Social Studies, was mastered at the high level indicated by the program staff. At year-end, both Anglos (96.3%) and Latinos (100%) exceeded the criterion of 90%.

Table 2.5 Performance of Second-Grade Pupils in Model A on Micro-Objectives: Mean for Each Objective.

Objective: Mean Percent of Pupils Completing the Micro-objectives (15 Anglos and 10 Latinos at mid-year, 20 Anglos and 8 Latinos at year-end).

	Year-end Criteria		Mid-year Performance		Year-end Performance	
	Anglo	Latino	Anglo	Latino	Anglo	Latino
5.1 Reading, 1st Lang.	-	-	71.0%	100.0%	90.0%	100.0%
5.2 Poetry, First and Second Language	75.0%	75.0%	34.0%	78.0%	51.1%	78.3%
5.3 Writing in the First Language	85.0%	85.0%	73.5%	91.0%	84.0%	94.0%
5.4 Spanish as a Second Language	80.0%	-	58.3%	-	76.0%	-
5.5 English as a Second Language	-	90.0%	-	64.3%	-	70.6%
5.6 Social Studies	90.0%	90.0%	90.8%	83.3%	96.4%	100.0%
5.7 Science	90.0%	90.0%	40.3%	97.6%	83.3%	100.0%
5.8 Mathematics	90.0%	90.0%	41.6%	66.7%	67.1%	90.7%
- Oral Review	-	-	84.9	77.4%	89.8%	99.3%

* One teacher claimed that the logs were completed in her class, but none were received by the research staff.

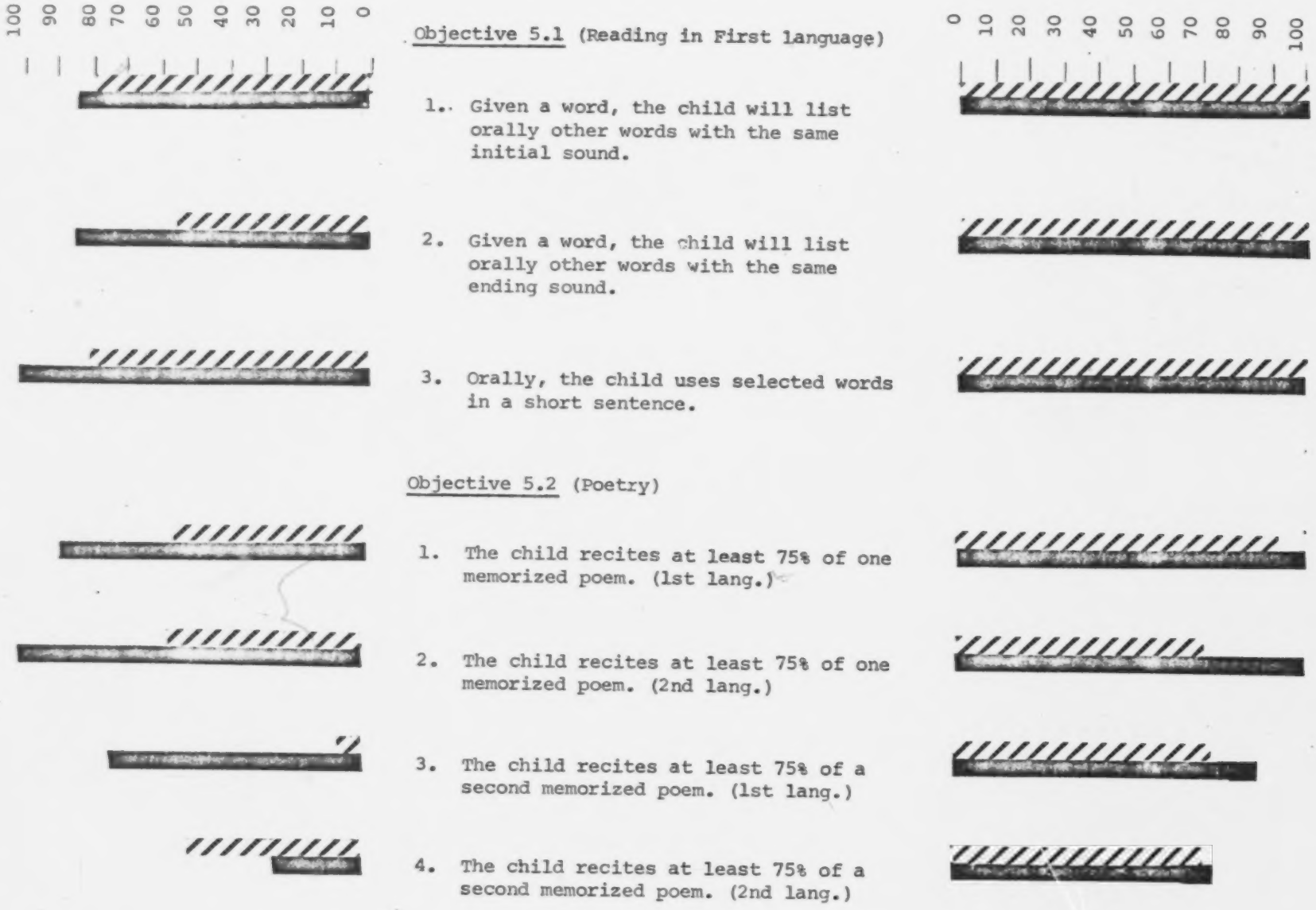

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 5.1 (Reading in First Language)
1. Given a word, the child will list orally other words with the same initial sound.
2. Given a word, the child will list orally other words with the same ending sound.
3. Orally, the child uses selected words in a short sentence.
Objective 5.2 (Poetry)
1. The child recites at least 75% of one memorized poem. (1st lang.)
2. The child recites at least 75% of one memorized poem. (2nd lang.)
3. The child recites at least 75% of a second memorized poem. (1st lang.)
4. The child recites at least 75% of a second memorized poem. (2nd lang.)
Key: Mid-year Year-end

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 1

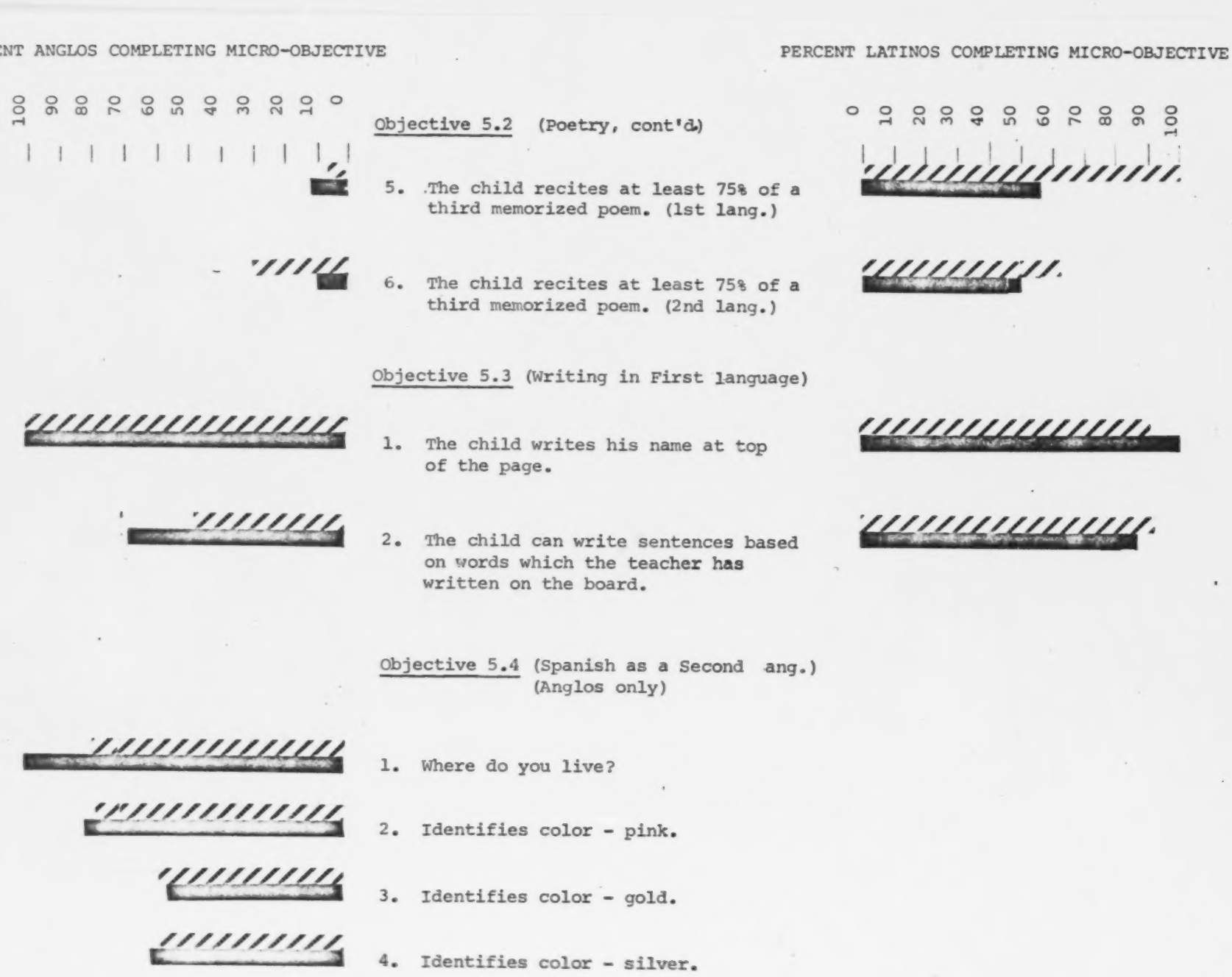

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
0 10 20 30 40 50 60 70 80 90 100
Objective 5.2 (Poetry, cont'd)
5. The child recites at least 75% of a third memorized poem. (1st lang.)
6. The child recites at least 75% of a third memorized poem. (2nd lang.)
Objective 5.3 (Writing in First language)
1. The child writes his name at top of the page.
2. The child can write sentences based on words which the teacher has written on the board.
Objective 5.4 (Spanish as a Second ang.) (Anglos only)
1. Where do you live?
2. Identifies color - pink.
3. Identifies color - gold.
4. Identifies color - silver.

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 2

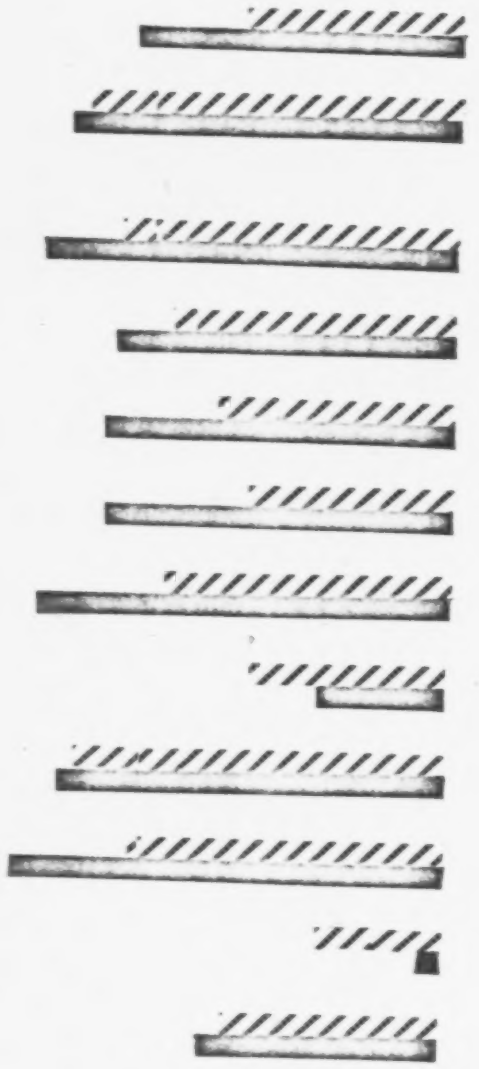
PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE

100 90 80 70 60 50 40 30 20 10 0

PERCENT LATINOS COMPLETING MICRO-OBJECTIVE

0 10 20 30 40 50 60 70 80 90 100

Objective 5.4 Spanish as a Sec. lang. cont'd) (Anglos only)



5. Identifies color - purple.
6. Orally, child uses the word pelo or nino in a short sentence.
7. Identifies kitchen.
8. Identifies stove.
9. Identifies refrigerator.
10. Identifies sink.
11. Identifies toaster.
12. Identifies mixer.
13. Identifies dining room.
14. Identifies table.
15. Identifies buffet.
16. Identifies china closet.

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 3

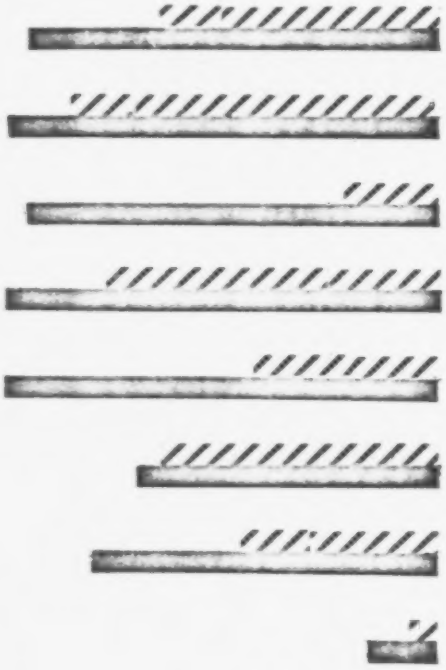
PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE

100 90 80 70 60 50 40 30 20 10 0

PERCENT LATINOS COMPLETING MICRO-OBJECTIVE

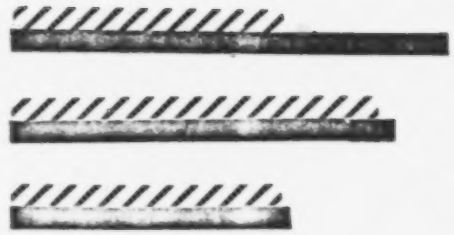
0 10 20 30 40 50 60 70 80 90 100

Objective 5.4 (Span. as a Sec. lang.,cont'd)
(Anglos only)



17. Identifies bedroom.
18. Identifies bed.
19. Identifies bureau.
20. Identifies chair.
21. Identifies bathroom.
22. Identifies bathtub.
23. Identifies toilet.
24. Identifies washbasin.

Objective 5.5 (English as a Second lang.)
(Latinos only)



1. Where do you live?
2. Identifies color - pink.
3. Identifies color - gold.

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 4

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE

100 90 80 70 60 50 40 30 20 10 0

PERCENT LATINOS COMPLETING MICRO-OBJECTIVE

0 10 20 30 40 50 60 70 80 90 100

Objective 5.5 Eng. as a Sec. lang., cont'd)
(Latinos only)

4. Identifies color - silver.
5. Identifies color - purple.
6. Orally, the child uses the word hair or baby in a short sentence.
7. Identifies kitchen.
8. Identifies stove.
9. Identifies refrigerator.
10. Identifies sink.
11. Identifies toaster.
12. Identifies mixer.
13. Identifies dining room.
14. Identifies table.
15. Identifies buffet.

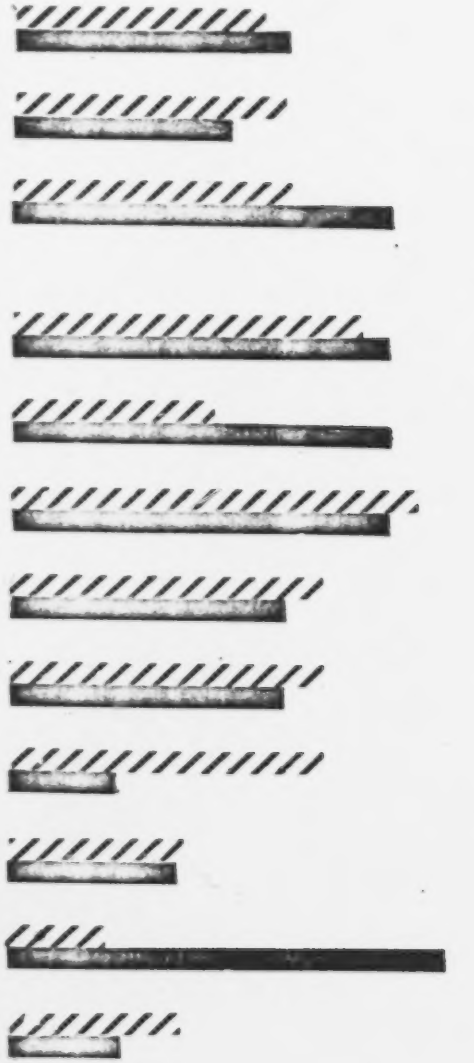
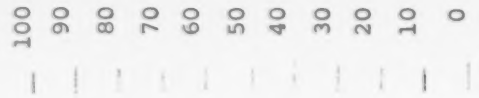
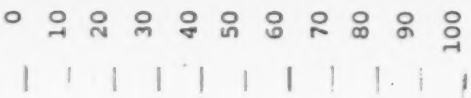


FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 5

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE

PERCENT LATINOS COMPLETING MICRO-OBJECTIVE





Objective 5.5 (Eng. as a Sec. lang. cont'd) (Latinos only)

16. Identifies china closet.

17. Identifies bedroom.

18. Identifies bed.

19. Identifies bureau.

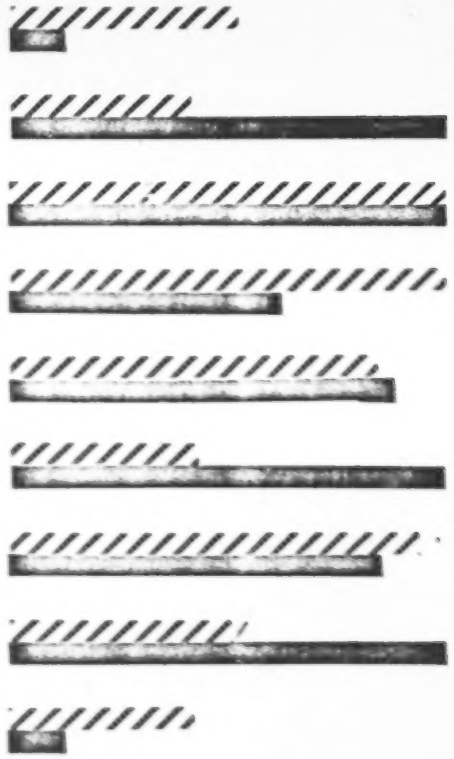
20. Identifies chair.

21. Identifies bathroom.

22. Identifies bathtub.

23. Identifies toilet.

24. Identifies washbasin.



Objective 5.6 (Social Studies in First language)

1. What does the nurse do?

2. What does the doctor do?

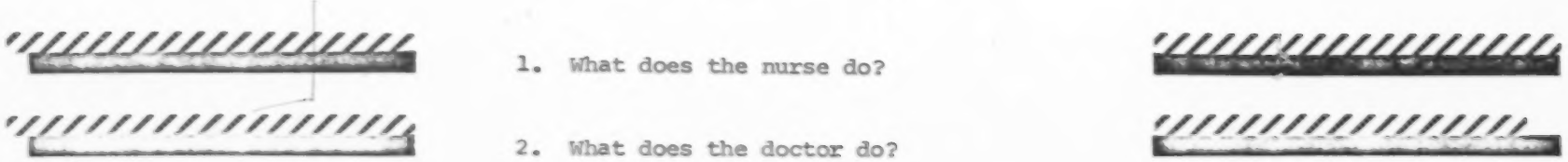


FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 6

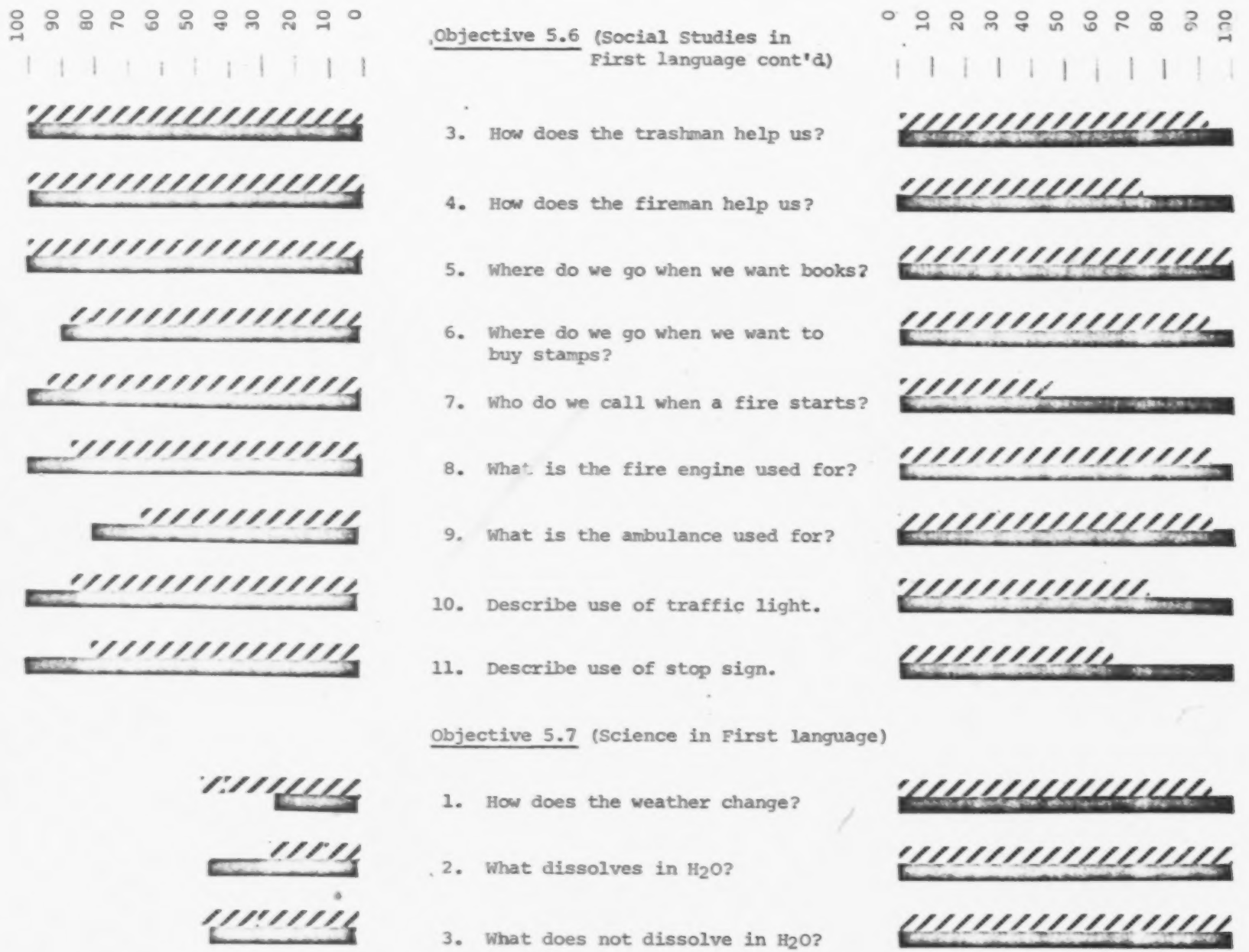

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 5.6 (Social Studies in First language cont'd)
3. How does the trashman help us?
4. How does the fireman help us?
5. Where do we go when we want books?
6. Where do we go when we want to buy stamps?
7. Who do we call when a fire starts?
8. What is the fire engine used for?
9. What is the ambulance used for?
10. Describe use of traffic light.
11. Describe use of stop sign.
Objective 5.7 (Science in First language)
1. How does the weather change?
2. What dissolves in H_2O?
3. What does not dissolve in H_2O?

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 7

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE

PERCENT LATINOS COMPLETING MICRO-OBJECTIVE

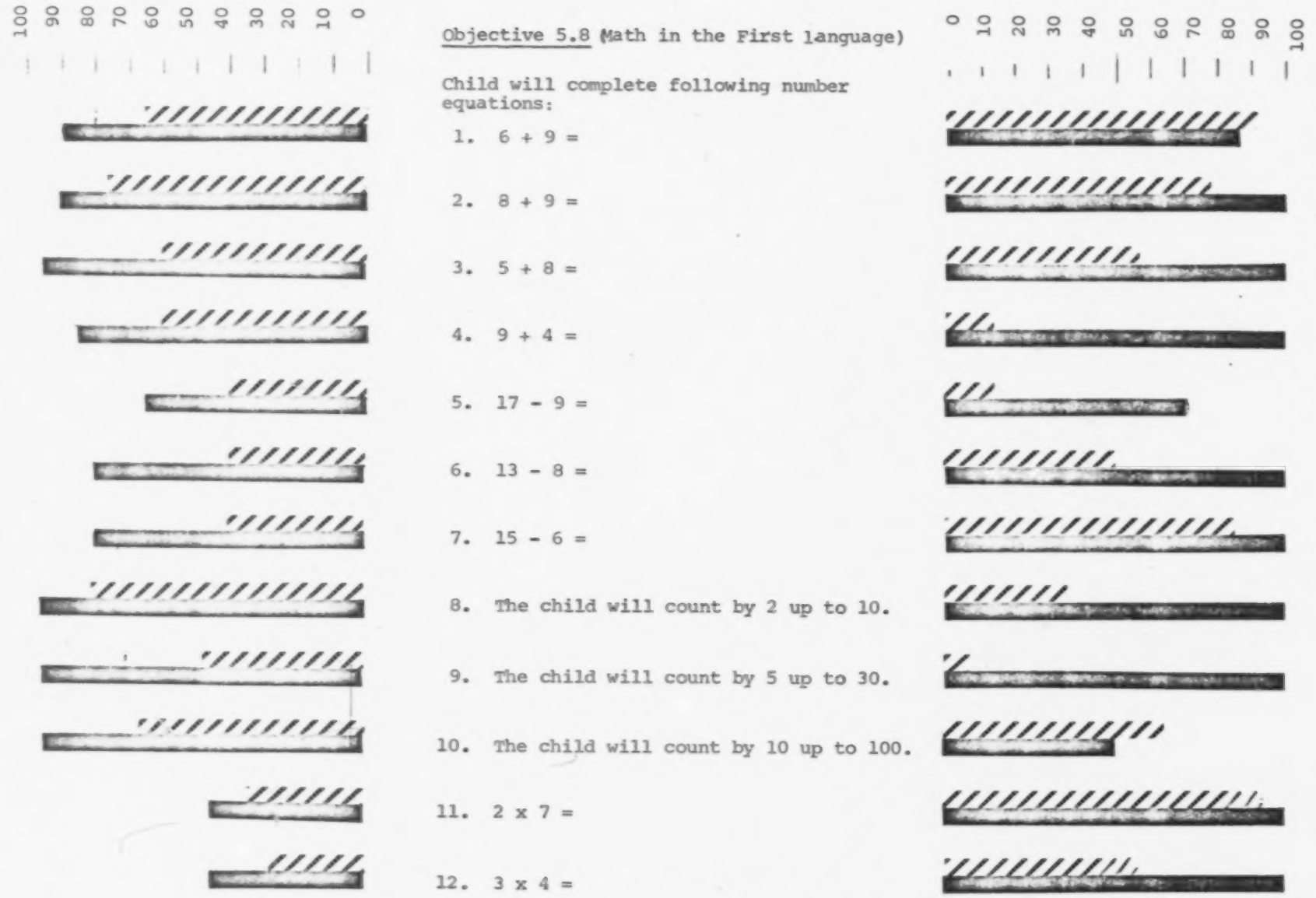

100 90 80 70 60 50 40 30 20 10 0
Objective 5.8 (Math in the First language)
Child will complete following number equations:
1. 6 + 9 =
2. 8 + 9 =
3. 5 + 8 =
4. 9 + 4 =
5. 17 - 9 =
6. 13 - 8 =
7. 15 - 6 =
8. The child will count by 2 up to 10.
9. The child will count by 5 up to 30.
10. The child will count by 10 up to 100.
11. 2 x 7 =
12. 3 x 4 =
0 10 20 30 40 50 60 70 80 90 100

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 8

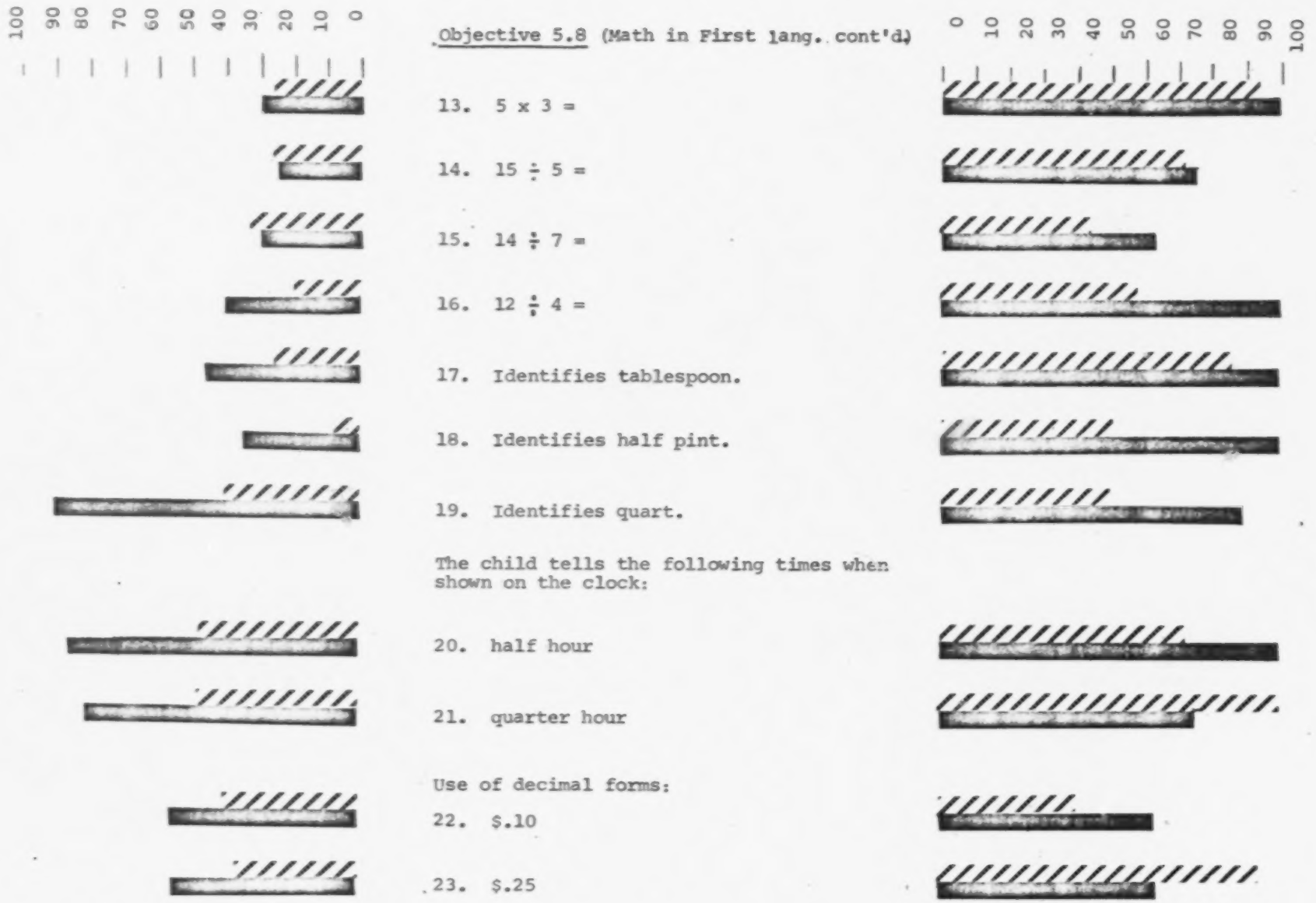

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Objective 5.8 (Math in First lang. cont'd)
13. 5 x 3 =
14. 15 ÷ 5 =
15. 14 ÷ 7 =
16. 12 ÷ 4 =
17. Identifies tablespoon.
18. Identifies half pint.
19. Identifies quart.
The child tells the following times when shown on the clock:
20. half hour
21. quarter hour
Use of decimal forms:
22. $.10
23. $.25

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 9

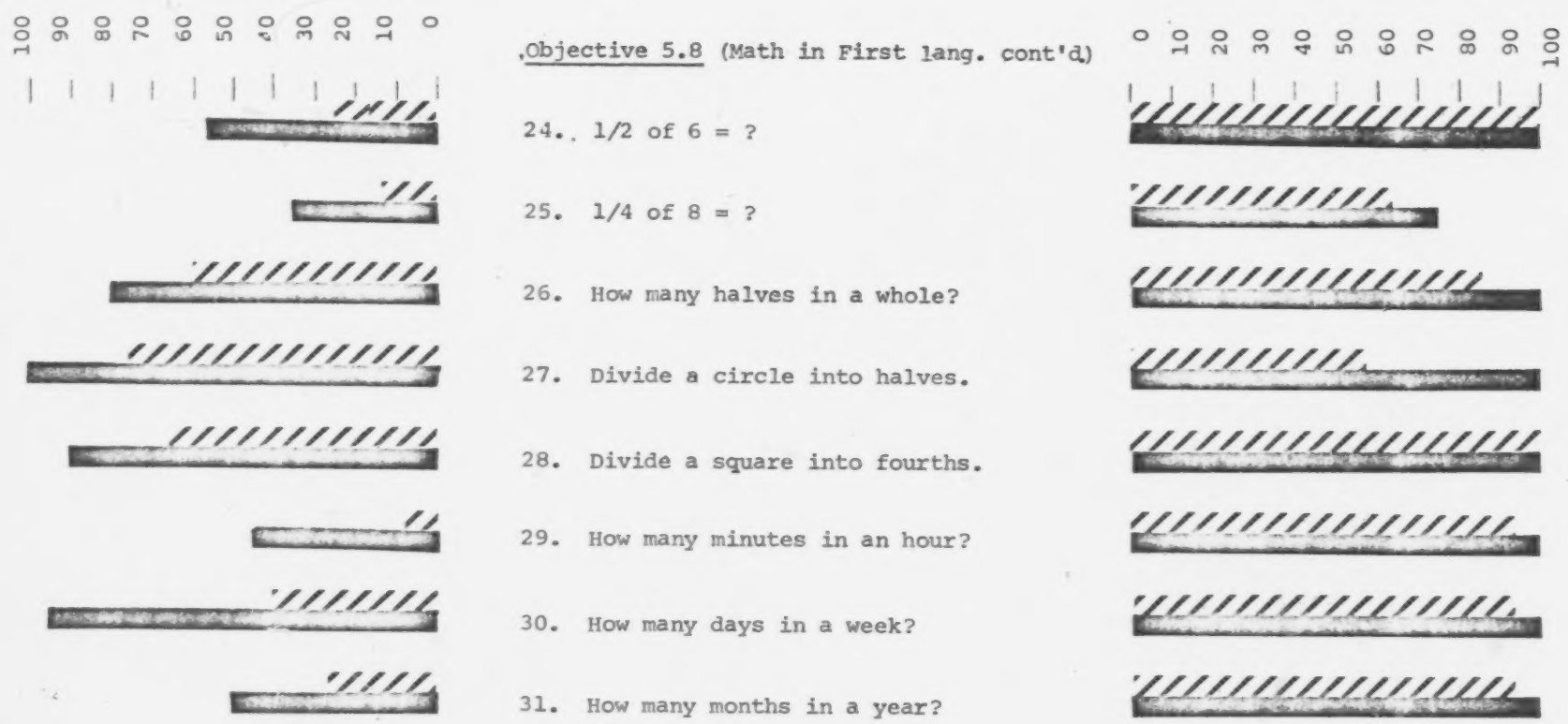

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
Objective 5.8 (Math in First lang. cont'd)
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
24. 1/2 of 6 = ?
25. 1/4 of 8 = ?
26. How many halves in a whole?
27. Divide a circle into halves.
28. Divide a square into fourths.
29. How many minutes in an hour?
30. How many days in a week?
31. How many months in a year?

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 10

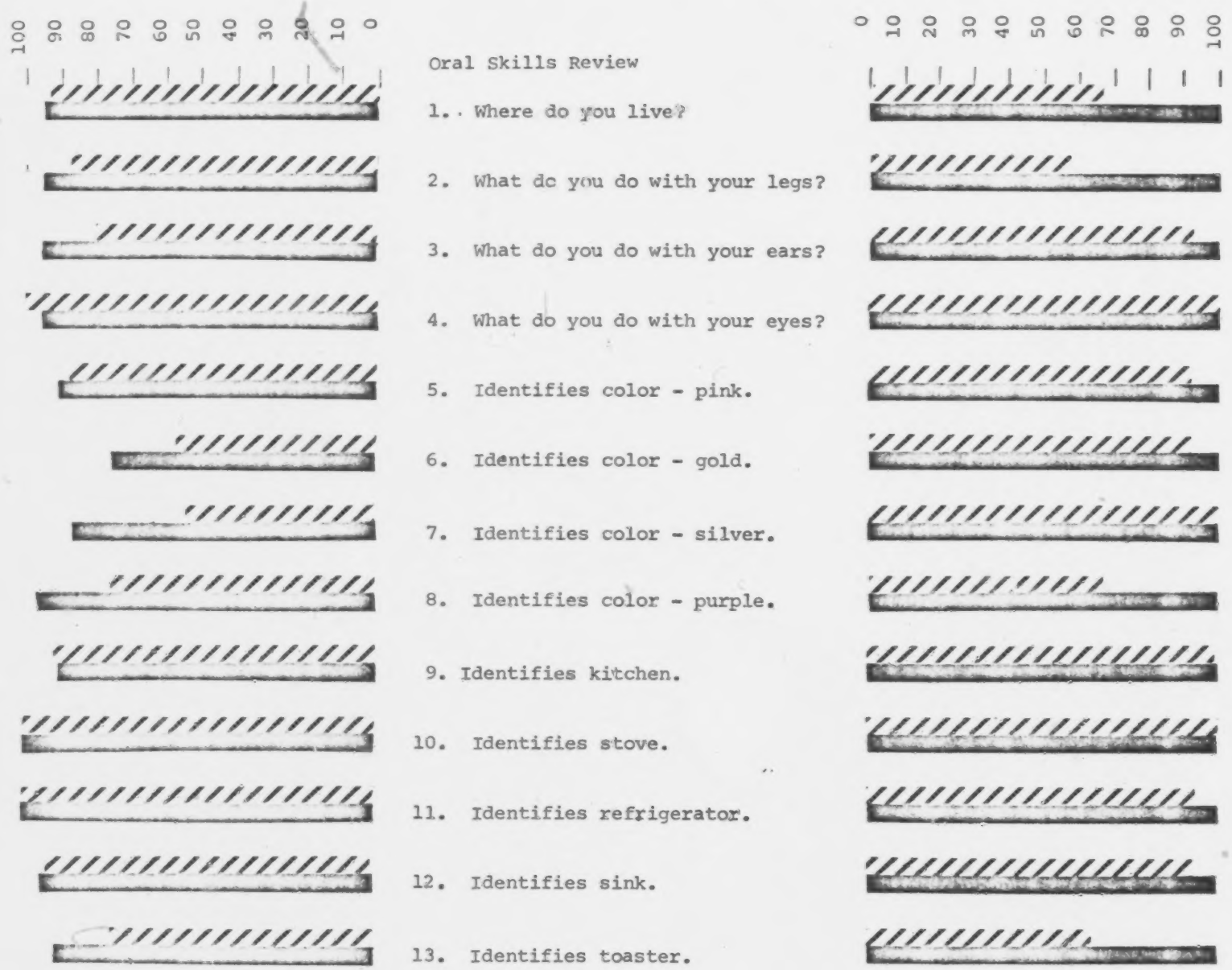

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Oral Skills Review
1. Where do you live?
2. What do you do with your legs?
3. What do you do with your ears?
4. What do you do with your eyes?
5. Identifies color - pink.
6. Identifies color - gold.
7. Identifies color - silver.
8. Identifies color - purple.
9. Identifies kitchen.
10. Identifies stove.
11. Identifies refrigerator.
12. Identifies sink.
13. Identifies toaster.

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART II

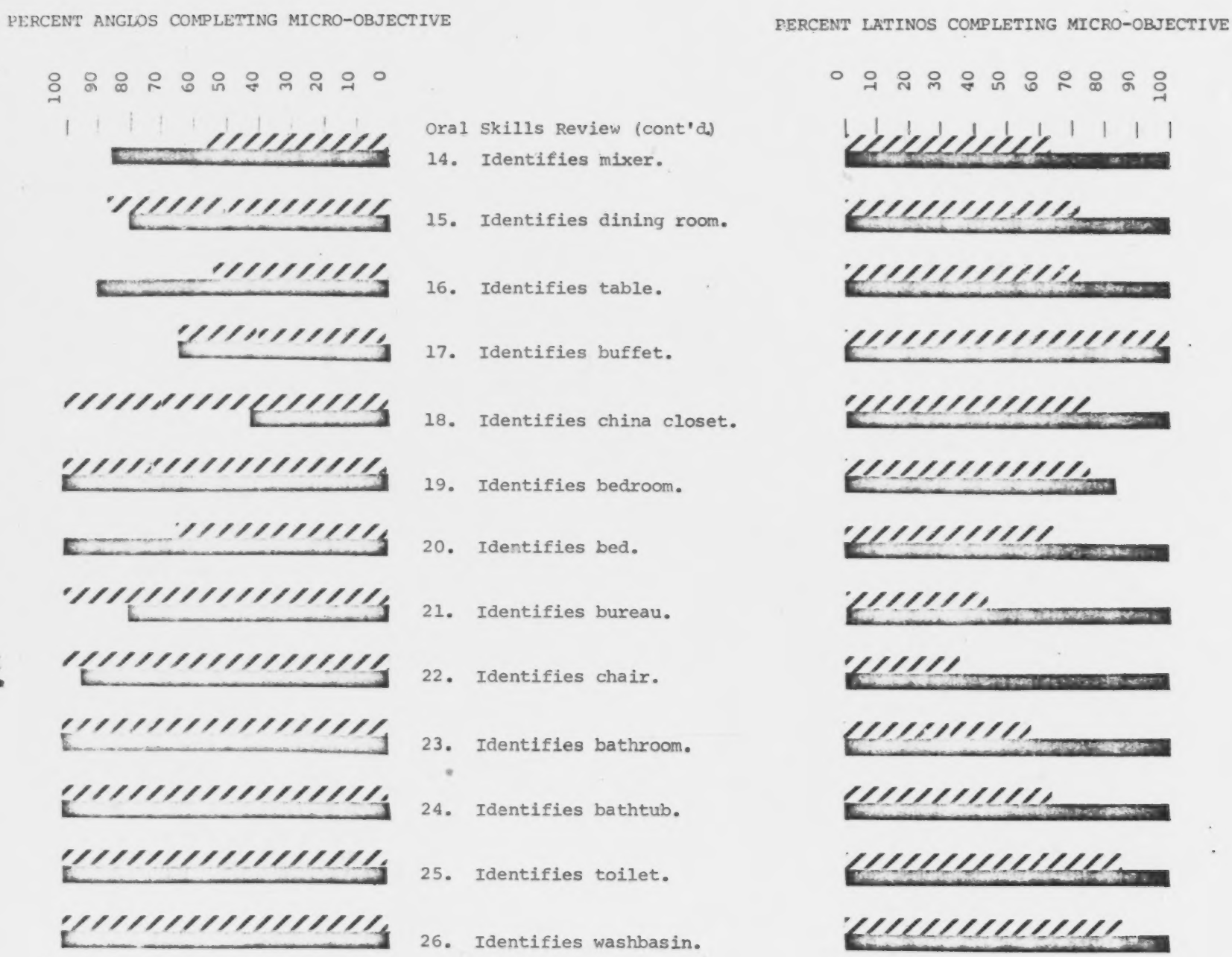

PERCENT ANGLOS COMPLETING MICRO-OBJECTIVE
100 90 80 70 60 50 40 30 20 10 0
PERCENT LATINOS COMPLETING MICRO-OBJECTIVE
0 10 20 30 40 50 60 70 80 90 100
Oral Skills Review (cont'd)
14. Identifies mixer.
15. Identifies dining room.
16. Identifies table.
17. Identifies buffet.
18. Identifies china closet.
19. Identifies bedroom.
20. Identifies bed.
21. Identifies bureau.
22. Identifies chair.
23. Identifies bathroom.
24. Identifies bathtub.
25. Identifies toilet.
26. Identifies washbasin.

FIGURE 2.5 PERCENT OF SECOND GRADE THAT TEACHERS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 12

Objective 5.7, Science concepts, consisted of three micro-objectives with criteria of 90%. Mastery of the three was lower for Anglos than anticipated (38.3%), but every Latino pupil examined could complete the items by year-end.

Objective 5.8, Number concepts, shows that Anglo pupils were working below the anticipated 90% level in the skills examined on the log. (Sixty-seven percent were able to correctly answer the typical micro-objective). Most problems seem to be in items involving multiplication, division, and fractions. Latino pupil performance was at a satisfactory level of 90.7%.

In addition, to the micro-objectives developed to assess specific objectives, a cluster of first-language items for review of oral skills was developed. No performance criteria were specified for these skills. However, performance was uniformly good, with Anglos averaging 89.8% and Latinos averaging 99.3% at year-end.

Validity Check

To ascertain that data completed by teachers was correct, samples of pupils both Model A and B classes examined were drawn and reexamined by a member of the research staff on a small sample (5 to 11) micro-objectives. As shown in Table 2.6, agreement was high both times. Examination of the raw data suggests that teachers' errors of overestimation and underestimation of pupil performance occurred about equally.

Table 2.6 Validity Check

	Mid-year	Year-end
Number of Pupils Observed	81	37
Number of Items Observed	796	304
Number of Agreements	691	272
Percent Agreement	86.8%	89.4%

Comparison of Model A and B

Comparison of Latino pupil performance in Model A and Model B in the two grade levels where both programs operated is shown in Table 2.7. As the number of observations is small, results must be approached with caution.

Table 2.7. Comparison of Model A and B Latino Pupil Performance at Year-end

Kindergarten

Objective	Mean Percent Pupils Completing Micro-objectives			
	Model A		Model B	
	Mean %	N	Mean %	N
2.1 First Language	92.8	20	100.0	5
2.2 Second Language	97.6	20	88.2	5
2.3 Number Concepts	87.0	*	94.3	5
2.4 Science	80.7	20	100.0	5

First Grade

Objective	Mean Percent Pupils Completing Micro-objectives			
	Model A		Model B	
	Mean %	N	Mean %	N
3.1 First Language	86.2	18	91.4	18
3.2 Second Language	54.3	18	83.2	18
3.3 Number Concepts	63.2	18	85.6	18
3.4 Science	52.4	18	92.6	18
3.7 Readings and Writing	54.3	18	97.4	18

* N=20, except for micro-objectives 2, 8, 10, 12, and 14 which were erroneously omitted by one teacher. N for these objectives = 15.

The difference in favor of Model B at this level might be explained by the fact that the Model B kindergarten met for a longer period each day than did the Model A. Differences between the Model A and Model B program in the first-grade samples are even stronger. Model B pupils performed better than the Model A group and all objectives observed. There is no obvious explanation for these differences at present, but some "guesses" offered by the project director are worthy of follow up. She stated that at mid-year principals of the two operating first-grade Model B sites asked for greater levels of contact with the pupil's second language, English, during the school day. In response to their request, contact with English was increased to about half the school day. It appeared that this may have improved the performance of the Model B pupils on the Second Language Objective (3.2) and on micro-objectives in the second language included in Objectives 3.3, 3,4 and 3.7 without similar decreases in first language performance. Supervisors have indicated that they feel that increased second language contact might also be possible in Model A next year.

Comparison of Pupil Performance in Spring 1970 with Spring 1971

As noted in the introduction to this paper, the micro-objectives for all levels of the Model School programs have been revised, with the emphasis on increasing the sophistication of the skills the pupils were expected to show. In addition, the year-end observations in 1971 occurred about five weeks later in the school year. This makes direct comparison of the 1971 school year with the 1970 school year difficult on an overall level. However, comparison of those micro-objectives maintained from the 1970 school year still seems appropriate. Tables 2.8, 2.9, and 2.10 compare the year-end performance on the objectives mentioned. The 1970 performance is that of the population of participants. The 1971 performance is that of the year-end sample. Results show that more pupils attained the common objectives during 1971 than had attained them in 1970, with the exception of the kindergarten Latino group whose performance remained virtually the same as that of the previous year (86.8% versus 86.6%) despite the difference in time gain.

Table 2.8 Comparison of 1969-1970 results with 1970-71 results on micro-objectives common to both years (year-end) Prekindergarten level.

Micro-objectives	Percent Observed Completing Objective			
	Anglos		Latinos	
	1970	1971	1970	1971
What color is your hair? (1st lang.)	72	100	85	90
Give me _____. (1st lang.)	100	100	95	90
Run! (1st lang.)	100	100	89	100
Jump! (1st lang.)	100	90	90	100
Hair color (2nd lang.)	95	100	81	90
Eye color (2nd lang.)	91	70	0	100
Who is he/she? (2nd lang.)	5	100	89	90
Get the _____. (2nd lang.)	100	100	82	100
Run! (2nd lang.)	100	80	82	100
Jump! (2nd lang.)	100	70	82	100
Count to 10. (1st lang.)	90	100	70	100
Count to 10 (2nd lang.)	65	100	90	80
How many _____? (1st lang.)	91	100	46	100
Weight comparison. (1st lang.)	92	100	95	100
Discriminates circle (1st lang.)	92	90	95	70
Discriminates triangle (1st lang.)	92	90	88	70
Disciminates square (1st lang.)	92	100	92	70
Mean	86.9	93.2	79.5	91.2

Table 2.9 Comparison of 1970 and 1971 results on micro-objectives common to both years (kindergarten level).

	Percent observed Completing Micro-objective			
	Anglo		Latino	
	1970	1971	1970	1971
Self idenification. (1st lang.)	100	100	99	100
How old are you? (1st lang.)	100	94	88	100
Where do you live? (1st lang.)	100	100	22	80
Family questions. (1st lang.)	98	100	89	100
Who is he? (1st lang.)	100	100	89	96
Identifies policeman. (1st lang.)	100	100	100	100
Identifies fireman. (1st lang.)	100	100	100	100
Identifies mailman. (1st lang.)	100	100	100	100
Sit/stand! (1st lang.)	98	100	90	100
Show me _____. (1st lang.)	100	100	95	92
Get the _____! (1st lang.)	100	100	90	100
Self identification (2nd lang.)	89	100	100	64
How old are you? (2nd lang.)	60	90	90	64
Where do you live? (2nd lang.)	58	30	68	64
Sit/stand! (2nd lang.)	65	60	100	67
Show me _____! (2nd lang.)	85	100	100	67
Get the _____! (2nd lang.)	75	60	100	65
Counts to 12 (1st lang.)	100	100	100	92
Weight comparisons (1st lang.)	95	100	30	95
Mean	90.6	91.2	86.8	86.6

Table 2.10 Comparison of 1970 and 1971 Results on Micro-objectives common to Both Years, first grade.

Micro-objective	Percent Observed Completing Micro-objective			
	Anglo		Latino	
	1970	1971	1970	1971
Self-Identification	100	100	95	100
Body Parts	95	100	45	100
Family members	99	100	90	95
Family structure	40	94	40	100
Counts to 100 (1st lang.)	45	53	0	67
Liquid measures	0	26	0	34
Weather activity (1st lang.)	100	98	85	90
Weather activity (2nd lang.)	10	12	85	84
Phonics activities (1st lang)	60	81	85	95
$\bar{X}$	61.0	73.8	58.3	85.0

Discussion

Taken as a whole, the log study shows that the enriched program carried out in 1970-1971 was more difficult for the pupils enrolled in it than was the program carried out in 1969-1970. Repeatedly, the data suggest a clear locus of increased difficulty for the pupils: items introduced in the pupil's second language, especially those which were introduced as parts of mathematics, social studies and science. Overall, Latino pupils showed performance superior to that of Anglos, primarily because these new second language skills are easier for Latino pupils immersed in an English-speaking environment. These facts once again raise the question raised in the log study last year, whether the program is differentiated enough to account for the very different experiences that Anglo and Latino pupils bring to the study of their second languages. It is anticipated that Hablemos a newly developed course of study for Spanish as a second language will be able to help guide this differentiation once its use becomes widespread.

Comparison of the micro-objectives which were indicated in the first and second years of program operation suggest that the material which was common to both years seems to have been better mastered in the 1970-1971 schoolyear despite the fact that it was embedded in a more complex program. This improvement is probably due to the later date that the observations were made.

Lastly, the validity check instituted this year suggests that although the pupil log is relatively unsophisticated as a measuring instrument and could be vulnerable to manipulation on the part of the teachers, the data it provided was verified at probably as good a level as that obtainable from less subjective measures which could replace it. The fact that the validity check produced virtually identical results for the mid-year observations indicates that the simplified data collection, which made it somewhat easier for the teachers, did not change the reliability of the information reported.

STUDY 3. PREKINDERGARTEN PUPILS' READINESS FOR AN ALL-DAY KINDERGARTEN PROGRAM OF MODEL A.

The prekindergarten at Model A was designed to give pupils a headstart in their cognitive development. In part, this gives talented pupils the necessary skills for entering an enriched all-day kindergarten in which they could learn to read. Results of last year's testing showed that most pupils had a good mastery of the skills that were taught in the program. As a result, an all-day kindergarten was established. It consisted of the more talented half of the previous year's prekindergarten pupils. Results of the All Day Kindergarten Program testing showed that pupils in it had begun to read in their mother tongues and functioned at a high level of mastery on the other skills in the program. (See studies 2 and 5).

Pupils in the prekindergarten program were obtained this year, as last year, by accepting pupils in order of their applying until the classes were filled. Five pupils were subsequently dropped (at the teachers request) due to immature behavior. An additional seven pupils were withdrawn from the program by their parents.

This study examines the performance of pupils on this same Pre-kindergarten Readiness Test at the end of the second year of program operation in order to (a) describe the performance of these pupils and (b) compare last year's performance with this year's performance.

Objectives

Objective 1.1 (First Language) included micro-objectives related to the identification of colors (red, blue, green and yellow).

Objective 1.3 (Number Skills) included activities which required the pupil to discriminate among geometric shapes and to count up to 10.

In addition to the skills specifically stated in the objectives, teachers were aware that their pupils would be examined on pre-reading skills involving letter matching.

Procedures

Program Procedure

The prekindergarten program was the same in 1970-1971 as it had been the previous year. Two classes met each for a half day, under the guidance of an Anglo teacher and a Latino teacher who worked as a team. For part of their class time pupils received instruction from the teacher who was the native speaker of their first language. They received second-language instruction from the teacher who was a native speaker of their second language. Joint activities were also held in which both Anglo and Latino teachers worked with the pupil group as a whole.

During the 1970-1971 school year the prekindergarten objectives included skills and activities believed to be closely related to all items appearing on the test; however, no specific practice on the test items was permitted.

Evaluation

Sample. All pupils enrolled in the Model A Prekindergarten and not absent on the days the tests were given were included in the testing. There were thirty-six Anglos and thirty-three Latinos. According to the pupil information system data there were 75 pupils on role.

Instrument. The prekindergarten readiness test was described in last year's evaluation report in detail (Offenberg, 1970, p. 61). The first group of seven items required pupils to match letters and shapes. The second group (four items) required pupils to make a number of marks indicated by a numeral. The number was read aloud as well as being presented visually. The next time required pupils to pick the square with four dots on it. This was followed by items in which pupils had to circle the digit that represented the number of dots appearing in the circle. The last six items required that pupils check the color whose name was stated by the teacher.

Administration. The test was administered individually to each child by a program supervisor. It was administered in the pupil's mother tongue, during the first half of May, 1971. No formal instructions had been prepared, because it was felt that an informal approach worked best with young children. However, supervisors report that they avoid hints or giving other undue aid to the pupils.

Analysis. The distribution of scores was tabulated and compared. This year's results were then compared to last year's (using a X^2). A class mean was also obtained.

Results

Pupil performance this year was very similar to that of the 1969-1970 school year. Anglo pupils averaged 18.2 items corrects (79%). Latino pupils averaged 17.1 items correct (74%).

The 1970 report gave the number of pupils who had perfect scores, made less than five errors (18 correct) completed about half the test or more (11-17 correct) and those who could not complete half the test correctly. Table 3.1 shows the number of pupils in each category in the spring of 1970 and in the spring of 1971. As can be seen, more pupils scored "perfect" and more scored "low" during 1971 than during the previous year, but the difference was not large enough to be statistically significant (X^2=3.88).

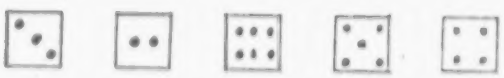
Table 3.2 shows the percent of Anglo and Latino pupils correctly answering each item. As can be seen, both groups of pupils did extremely well on the matching shape, letter and number matching items, and reasonably well on the rest. At least half the pupils in the two ethnic groups could correctly complete all items with but three exceptions. Only 44%

Table 3.1. Comparison of the distribution of scores on the Kindergarten Readiness test, First year of program operation vs. Second year of program operation

School Year		Level of Performance				
		Perfect 23 correct	Good 18-22 correct	Fair 11-17 correct	Low 10 or less correct	Total
1970-1971	N	16	23	21	9	69
	%	23	33%	31%	13%	100%
1969-1970	N	9	19	20	2	50
	%	18	38%	40%	4%	100%

Chi Square = 3.88, d.f. = 3, Not Significant ($X^2.05 = 7.82$)

Table 3.2 Performance of Prekindergarten pupils on each item of the Prekindergarten Readiness Test.

Percent of Pupils Suceeding			
Anglo N=36	Latino N=33		
100	100	B F E E B	Look at this (teacher points to the figure in the left hand colurn). Now look at these and tell me if you see one that looks the same (teacher points to the remaining figures in the right hand column.
94	100		
94	100		
94	100	2 3 1 2 4	
94	100	3 1 3 5 2	
97	100	A B C A E	
89	100	2	Do you know what this number is? (If the child does not know the number, the teacher tells him, and then continues). Draw two dots.
100	66	3	
61	36	5	
61	24	6	
64	58		Find the box with 4 dots. (The teacher begins counting the dots in the first box with the child and then allows him to continue until he finds the correct box.
69	76	1 2 3	Count the dots in the Circle. Draw a line under the number that tells us how many dots are in the circle.
44	76	4 6 5	
72	70	5 4 6	
72	58	2 3 4	
67	58	5 7 6	
64	64	9 4 8	The teacher blocks out the other rows and says to the child:
94	82	Blue Orange Green	Show me orange and draw a line on orange.
78	58	Purple Yellow Red	Show me purple and draw a line on purple.
75	79	Blue Red Yellow	Show me yellow and draw a line on yellow.
72	76	Green Yellow Red	Show me green and draw a line on green.
69	76	Blue Red Orange	Show me red and draw a line on red.
64	82	Blue Orange Purple	Show me blue and draw a line on blue.

of the Anglos could complete number 13, which asked pupils to match the number 6 with six dots. Thirty-six percent of the Latinos could draw five circles and only 24% could draw six circles. These items all involve the numbers 5 and 6.

Discussion

This findings of this study suggest that although the number of pupils in the prekindergarten was increased substantially (from 50 to 69 pupils) quality of performance on the skills on this test was about the same as in the first year of program operation. As a result, it appears that there ought to be a slightly larger pool of pupils available for the all day-kindergarten in 1971-1972 than there was for 1970-1971.

STUDY 4. KINDERGARTEN PUPILS' READINESS FOR FIRST GRADE IN THE MODEL A AND MODEL B PROGRAMS

The kindergarten program had been modified during the second year of program operation. It now consisted of three distinct programs: Regular Kindergarten-Model A, which met at the Potter Thomas School and served both Anglo and Latino pupils; All-Day Kindergarten-Model A, a special program for talented pupils who had participated in the pre-kindergarten program at Potter Thomas the year before; and the Kindergarten Model B which operated at the Bethune-Wright school. This last class was to be a regular half-day program with both Anglo and Latino pupils participating. However, the full program could not be implemented (See Study 1). The Kindergarten at the Bethune-Wright school was organized as a Latino pupil only program with both an ESL and Spanish-speaking teacher. This class met for a full day; but, because the pupils had no prekindergarten experience, the teachers were asked to concentrate on the contents of the regular kindergarten program, supplementing it where they felt it desirable.

This study explores the success of these programs in readying the pupils for performance in the first grade. Study 5 in the 1970 Evaluation Report (Offenberg, 1970, p. 66-69) explored the readiness of pupils in the regular kindergartens operated at the Model A site, which was specified in Performance Objective 2.7. This objective now applied to both the Regular Kindergarten, All-Day Kindergarten and the Model B Kindergarten. This objective stated that when children were given the test directions for the Philadelphia Readiness Test in their mother tongue, both the Anglo and Latino pupils would exceed the city-wide mean (20.1) and at least equal the Potter Thomas School mean (20.9) of June 1969, the last year that this test was administered to all pupils in the school system.

Last year's results showed that the project had indeed achieved the goals set for it. The Anglos tested in English averaged 21.7, the Latinos who were tested in Spanish averaged 24.4. A sample of one-half of the Latinos were tested in English. They averaged 20.2.

Procedures

Program

According to the program guide all students in the various kindergartens were to be engaged in activities in which they would identify shapes, match letters and groups of letters, and perform simple numeric operations. According to the program supervisors, who observed classes regularly, these activities were incorporated in the ongoing classroom activities of both the classes at the Model A and Model B sites.

Evaluation

Instrument. The Philadelphia Readiness Test was discussed in some detail on p. 66 of the 1970 evaluation report. It requires the pupil to copy shapes, match letters and words, and carry out simple numeric

operations. There is not a one-to-one correspondence between the test items and the skills taught in the program's micro-objectives. However, the similarity is such that attainment of these micro-objectives should help the pupils in this test, and mastery of the concepts underlying the micro-objectives should enable the pupil to carry out all the items.

Population and Administration

All pupils enrolled in the Regular Kindergartens (Model A), the All-Day Kindergartens (Model A) and the Model B Kindergarten during the last weeks of May were tested. As with last year's program the testing was carried out by the classroom teacher in small groups of three to five pupils at a time. The test was administered in English to Anglo pupils and Spanish to Latino pupils.

The All-Day Kindergarten group consisted of pupils who had completed the prekindergarten program, scored highly on the year-end Prekindergarten Readiness Test, and were recommended by their teachers. It consisted of 19 Anglos and 21 Latinos. The Kindergarten group of Model A consists of all other pupils enrolled in the program. As kindergarten is not mandatory, the pupils are of parents who requested their participation. It consists of 78 Anglos and 73 Latinos. The Model B kindergarten consists of 19 pupils, all Latinos, who were assigned to the program by the host school staff because they were Spanish speaking. They came from pupils who had been registered for the program by their parents.

Tests were scored by teachers as they had been during the 1969 baseline year and during the first operational year. As was noted in the 1970 Evaluation report, at least some tests appeared to have been administered incorrectly, and a rechecking of a sample item was undertaken. This year there was a review of the tests and the teachers' scoring of them. The evaluation staff agreed with virtually all scores given, with about as many instances of underestimation as overestimation of the level of performance in the few discrepancies. The tests appeared to have been completed by the children themselves in the way the instructions indicated.

Results

The overall results for this years testing are on Figure 4.1. They show that the performance of the Anglo pupils was virtually unchanged, with the mean score of 21.4 being just a shade below that of last year's 21.7. The scores of the Latino pupils were below that of Latinos tested in Spanish last year. This year, all Latinos tested averaged 20.2 which was above the city-wide mean, but below the mean level of the Potter Thomas School in the 1969 baseline year. The Latino pupils in Model A above were below both the all-city and the Potter Thomas baselines. The drop in performance of the Latinos in Model A from the past year to the current year is statistically significant ($t=4.3$, $df=123$, $p<.01$).

As can be seen on the table, the All-Day Kindergarten group scored about two points higher than the regular kindergarten, with the

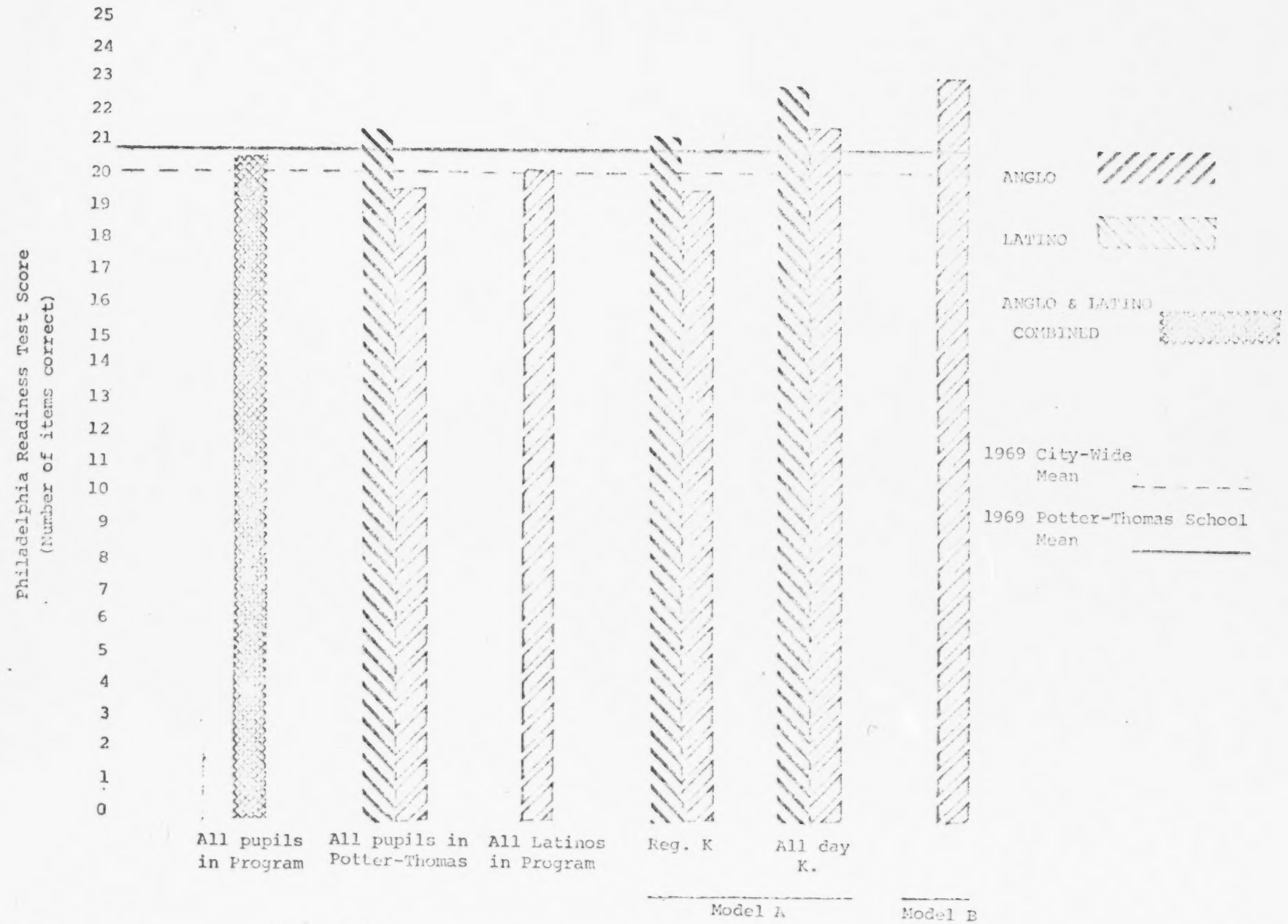


Figure 4.1 Scores on the Philadelphia Readiness Test

Table 4.1. Changes in Performance of Latino Pupils at Potter Thomas Latino School from June 1970 to June 1971

Test Part		1970 (N=30)	1971 (N=97)	t*	p
Copying Shapes	$\bar{X}$	6.33	4.03		
	S.D.	1.18	2.31		
				5.23	.01
Matching Words and Letters	$\bar{X}$	9.67	8.68		
	S.D.	0.61	1.40		
				3.71	.01
Counting	$\bar{X}$	4.13	3.55		
	S.D.	1.33	1.41		
				0.88	NS
Number Operations	$\bar{X}$	3.73	3.39		
	S.D.	1.31	1.67		
				1.02	NS

*df = $N_1+N_2-2=125$, Alpha was set at .05

Anglos and Latinos maintaining the same relative positions. It is, of course, not possible to tease out how much of this difference was due to the program and how much was due to the fact that the All-Day Kindergarten group consisted of select pupils to begin with.

The pupils in the Model B program averaged about 23.1, which was higher than any other Latino group during the current year, and about equal to the outstanding performance of the Latino children during the first year of program operation.

To provide some insight into factors underlying the Latino Model A kindergarten pupils' change in performance from the 1970 to the 1971 school years, four t tests to examine the significance of the changes in performance on the four sub-parts of the Philadelphia Readiness Test were computed.

These results are shown in Table 4.1. The t-tests showed that two parts differed significantly: copying shapes ($t=5.23$, $df=125$, $p<.01$) and matching words and letters ($t=3.71$, $df=125$, $p<.01$). The first of these two parts, copying shapes, required that the pupil copy geometric figures. Good discrimination of shapes and hand-eye coordination were necessary. The second part required that pupils be able to find words and letters which are identical.

The two parts of the test, counting and number operations, were not significantly different for the two groups.

Discussion

These results present a mixed picture of the readiness skills of the kindergarten pupils for first grade. It is clear that performance of pupils in the special All-Day Kindergarten and in the Model B Kindergarten (which also meet for a whole day) was excellent. The overall performance of the Anglos was also quite good. The performance of the Latino pupils in regular kindergarten classes, while below the success criteria of the program, was not alarmingly poor. It had been hoped that excellent performance of this group in 1970 could have been maintained during the current year.

The finding that the Performance of Latinos this year and last year were primarily accounted for by two test parts (copying shapes and word and picture matching) suggests that exploration by the program staff of the teaching methods used in developing these skills may be warranted. Review with teachers of the classroom activities used last year and this year (and also those used by the All Day Kindergarten and Model B teaching team) might permit the development of classroom strategies which would be beneficial to all participants in the program.

STUDY 5. CRITERION REFERENT EXAMINATION READING SKILLS IN THE FIRST AND SECOND LANGUAGE IN THE MODEL SCHOOL PROGRAMS

The guiding philosophy of the Model School Programs is that pupils learn all skills best when they are introduced in the mother tongue. Learning a skill in the second language is facilitated by the pupils' having mastered that skill in their first language. Pupils in the Model School Programs (Model A and Model B) were therefore introduced to reading in their mother tongue in the first grade. Pupils showing adequate mastery of reading in their mother tongue were then introduced to second-language reading in the second grade.

During the first year of program operation, reading was examined in the first grade in the mother tongue, with Anglos using the Bank Street reader, and Latinos using the Laidlaw series. During the second year of program operation, the reading program became more varied as additional needs were developed. About half of the second-grade pupils began to read in their second language. Reading was begun in all-day kindergarten by pupils enrolled at Potter Thomas School, and of course, reading was introduced in the Model B first grade.

The program became more heterogeneous as a result of modifications introduced during 1970-1971. Special phonics-based materials were developed for use with the Spanish-language reading materials. Slow Anglo readers in second grade and Anglo pupils in the all-day kindergarten did not use the Bank Street readers.

Program evaluation, already made difficult by the variety of methods and materials, was further complicated by adoption of a criterion-referent approach. This approach, which showed pupil mastery of the specific skills taught him, seemed an important way to assess beginning skills. Its importance stems from the fact that pupils can be expected to show mastery of only the specific skills which they have been taught at the lower grade levels.

Evaluation of reading was also complicated by the desire to measure more complex skills than the simple word calling examined during the 1969-1970 school year. Hence, instrumentation was developed for examination of these more complex skills. This paper addresses itself not only to examination of pupil performance; but, where appropriate, to beginning exploration of the properties of the tests developed for assessment in this area.

A second paper (Study 6) examines the performance of Anglo second-grade pupils on a reading test used throughout the school system.

Objectives

All-Day Kindergarten, Mother Tongue. The plan for an all-day kindergarten was developed after completion of the 1970-71 proposals. No specific objectives were developed for this level, but exploratory data was collected which can serve as the basis for objectives in the future.

First Grade, Mother Tongue. Objective 3.7 stated in part that eighty percent of the first-grade pupils would be able to recognize 40% of the sight vocabulary of the preprimer and the first primer text of the reading series in use in their mother tongue (Laidlaw for Latinos, Bank Street for Anglos) by the end of the first grade.

Second Grade, Mother Tongue. Objective 5.1 stated that the following distribution would be observed at the end of the second grade: Level 2, Part I of the reading text would be mastered by 50% of the pupils, Level 1 would be mastered by 30%, the primer level will be mastered by 20%. The proposal does not specify quality of performance at these levels, but presumably the 90% mastery of sight vocabulary, as specified in the first-grade objective, applied.

Second Grade, Second Language. Although the objectives for second language were primarily oral-aural in nature, about half of the second-grade pupils were introduced to reading in the second language using the regular readers. Their performance is documented here, although these skills were more complex than those indicated in the proposal document. Although these objectives referred to simple word-calling tests, it was felt that pupils could handle more complex activities. For this reason, instruments were designed to tap varied reading skills. Analysis of these instruments is included in this study. It was anticipated that these data would be useful in assessing changes in reading performance which might occur when the program was modified in successive years and would provide insight into the development of reading skills in bilingual children.

Method

Program

Approaches to the teaching of reading in the Model School Programs have become more varied in an attempt to fulfill the perceived needs of all the children. This has resulted in departures from the strategies in the enabling objectives specified in the proposal documents.

All Day Kindergarten, First Language. No objective mandated the formal teaching of reading at this grade level beyond the readiness skills indicated in the course outline shown in the 1971-1972 Continuation Proposal, pages 17 to 34. However, pupils in the all-day kindergarten were introduced to linear materials in their mother tongues at about midyear.

The Latino pupils enrolled in the program began reading the Por el mundo del cuento y la aventura, (River Forrest, Illinois, Laidlaw Bros., 1969). Anglo pupils were introduced to reading using the Chandler Reading Program (New York, Nobel and Nobel, 1970).

First Grade, First Language. After brief work with readiness skills, all pupils in the first-grade classes began to work with the regular reading texts used in the program. Anglos began reading the Bank Street materials (New York, McMillan, 1968); Latino pupils, the Laidlaw materials. At the Model A site, Latino pupils used teacher-prepared phonics

materials as a supplement. The Model B teachers did not use this supplement.

Second Grade, First Language. Latino pupils in the second-grade classes continued to use the Laidlaw Reading Series. Anglo pupils were divided into two groups, based on their reading performance in the first grade (confirmed by teacher observation at the beginning of the school year). The high-achievement group continued to work with the Bank Street Materials. The slower group worked with the Sullivan Programmed Readers (Webster Division, McGraw Hill, 1968).

Evaluation

The evaluation design had, as noted, been complicated by the variety of materials and approaches used at the various levels of the program. The current tests are for use in All-day Kindergarten, First and Second grades. At the Prekindergarten level word-calling skills were measured. At the first grade level, word-calling, oral reading of sentences, and pupil skills in matching appropriate words to pictures were measured. At the second grade, Paragraph Comprehension was added to the skills measured in the first grade pupils.

Instruments

Chandler Readers. This is a word-calling test consisting of ten words sampling the vocabularies introduced by the first five pre-primer booklets of this reading series, (Swings, Slides, Trucks and Cars to Ride, Bikes, and Supermarket). The words were chosen (a) to be of typical difficulty and (b) to sample most of the letter-sound combinations emphasized in each booklet. The test was designed for individual administration to the all-day kindergarten pupils, who read each word aloud. A sample of this test is shown in Appendix 5.1.

Bank Street. The reading test for the Bank Street materials consists of four parts, shown in Appendix 5.2. It is based on the first seven books of the series, In the City, People Read, Around the City, Uptown Downtown, My City, Green Lights Go, and City Sidewalks.

The first part, Word Calling, was a test in which a sample of 10 words of typical difficulty, was selected from each of the readers which pupils in the Model School first and second grades were likely to use during the 1970-1971 school year. Words were chosen that introduced letter-sound combinations, were judged to be of typical difficulty and were reentered at least 5 times in the reader in which they were introduced. Pupils were asked to read each word aloud in an individual testing situation. When ten errors in a row were made the testing was stopped.

The second part of the test, Sentences, consisted of samples of three sentences. The sentences were chosen to be of typical complexity for the book from which they were drawn. One sentence was drawn from each third of the readers. This test was designed for individual administration. The pupils were asked to read each sentence aloud. When a pupil made an error in each of three successive sentences, the testing was stopped.

The third part of the Bank Street Tests, Pictures, was designed for group administration. It tested the pupils' ability to select the word illustrated by a picture, and was thus an attempt to measure pupil ability to understand what they read on the single word basis. Items were developed which sampled the readers (four items for each book). The items were selected to test gross differentiation of meaning and word recognition, and not shades of meaning or words with similar graphemes. For convenience, it was divided into two parts for administration on consecutive days.

The fourth part of the Bank Street Tests, Paragraphs, was also designed for group administration by the classroom teacher. It consists of brief (two-or three-sentence) paragraphs, followed by a sentence with a blank. The testee was to choose the word which made the sentence correct. Three paragraphs were chosen from each reader level. A fourth test item for each level was constructed by the test developers. This fourth item was similar to the others, except that the reading passage was unfamiliar to the pupils because it did not appear in the reading texts. The Paragraph subtest was divided into two parts of equal difficulty for administration on two consecutive days.

Laidlaw Readers. A four-part test (Word-Calling, Sentence Reading, Pictures and Paragraphs) was developed for the Laidlaw series. The Test is shown in Appendix 5.3. The format of the test and the method of development was the same as that described for the Bankstreet Reader Test, except that the test was in the Spanish language. The tests sample materials in the following readers: Camino de La Esuela Aprendemos A Leer, Nuestros Amigos Del Campo al Pueblo.

Sullivan Programmed Readers. A four-part test, similar to the one developed for the Bank Street readers, was prepared to assess the skills of the children using the Sullivan programmed readers. It is shown in Appendix 5.4. The major difference between this test and that developed for Bank Street was the sources of the items. The first three subtests were based on the programmed texts. The fourth subtest was based on the readers designed to accompany the Sullivan series. The test samples material from Programmed Readers 1, 2, 3 and 4 and their accompanying story books.

Procedure. Two different procedures were used to collect the data for this study: one for the Word-Calling and Sentence Reading subtests, a second for the Picture and Paragraph subtests. Word Calling and Sentence Reading were administered individually to pupils by members of the project supervisory staff who spoke the pupils' mother tongue. The Picture and Paragraph subtests were administered by each teacher to her class as a whole, with the pupils working at their desks.

All tests were administered during the last weeks of May and the first week of June.

Subjects. With the exception of the Chandler tests used with Anglo pupils in the All-Day Kindergarten, all pupils in attendance on testing days were examined on the subtests used for the pupils' grade level.

The tests in the mother tongue used in each grade level were as follows: All-Day Kindergarten, Word Calling only; First grade, Word Calling, Sentences, Pictures; Second Grade, Word Calling, Sentences, Pictures and Paragraphs.

Pupils in the second grade who had begun to read in the second language were examined with the Word Calling and Sentences subtests in their second language.

The Anglo All-Day Kindergarten pupils' tests did not fit this procedure because tests administered by the program supervisors according to this plan to this group were lost and never received by the project evaluator. To remedy this situation, supervisors visited nine Anglo children (about half the class) at home the day after school closed. These pupils were tested a second time in their homes. The classroom teacher felt that the nine pupils tested were typical of the class as a whole.

Analysis. Quickscore, a proprietary program owned by the University of Pennsylvania, was used to score the tests and provide simple item analysis. Biomedical Program BMD 07 D was used to compile the scores for individual grade levels and to generate the descriptive statistics shown.

Results

As objectives were originally stated in terms of "word calling" skills, these measures will be treated first; then results for the other types of measures will be presented along with any findings which suggest properties of the test instrument.

All-Day Kindergarten, Anglos, Word Calling, Chandler Text. Introduction of reading in an all-day kindergarten program was not mandated by the proposal documents, and therefore, any skill represents achievement beyond that originally anticipated by the program planners. Anglo pupils began reading the Chandler text. A sample of nine pupils were examined on the Word-Calling test for the Chandler reader (about half the Anglo all-day kindergarten pupils). The results are shown on Table 5.1. These results showed that the pupils had close to total mastery of the material presented, with the average pupil able to call out nearly nine of ten words on the test. All but three pupils were able to read every word on the test.

TABLE 5.1

Results of Testing All-Day Kindergarten Anglo Pupils on Chandler Word-Calling Test[9]

Mean Score	8.9
Standard Deviation	1.6
N	9
Test Maximum	10

All-Day Kindergarten, Latinos, Word Calling, Laidlaw Texts. As with the all-day kindergarten Anglos, introduction of reading at this level was not mandated by the proposal, thus any skill represents achievement beyond that originally anticipated. Pupils in this group worked with the pre-primer level of the Laidlaw text, which is represented by the first ten items on the more general Word-Calling Test for the Laidlaw materials. However, if the child could read beyond these first ten items, he was permitted to do so.

Results are shown in Table 5.2.

TABLE 5.2

Results of Testing All-Day Kindergarten Latino Pupils on Laidlaw Word Calling Test

Mean Score	7.6
Standard Deviation	7.5
N	21
Test Maximum	40
No. of Items Based on Material Taught at This Level	10

The pupils averaged 7.6 words, or roughly 3/4 of the material that they were exposed to. However, attention must be drawn to the large deviation. This was the result of exceptional performance on the part of one pupil who was able to read items well into the second grade reader (36 items). All other pupils were in the range of three to ten items correct.

Anglo First-Grade Pupils, Word Calling, Bank Street. All Anglo pupils in the Model School Program were introduced to reading using the Bank Street texts. The Word Calling subtests of this test span seven textbooks (one pre-primer, two primer, one Level 1 text, two Level 2 texts, and the text for the first half of Level 3). Ten items appear from each of these texts except one (Level 2, part 2) which contains only nine items.

Objectives for the Anglo first-graders required that 80% of the pupils be able to read at least 90% of the sight vocabulary introduced by the pre-primer and primer. Pupils who succeeded in this objective should read eighteen words on the Word Calling test. For the program to have succeeded as a whole, at least 80% of the pupils would have had to have above 18.

TABLE 5.3

Results of Testing First Grade Anglo Pupils on
Fonk Street Word Calling Test

Mean Score	23.5
Standard Deviation	13.3
N	61
No. of Items on the Test	69
No. of Items Applicable For Anticipated Year End Level	20
Criterion Score (90% Correct)	18
Percent Pupils Meeting Criterion	65%

The results shown in Table 5.3 present a mixed picture. The mean score of 23.5, being greater than 20, shows that many pupils (23) had mastered materials more difficult than those specified in the program objective. However, the finding that only 65% of the pupils had scores of 18 or more, as opposed to the 90% indicated in this objective, suggests that performance was more heterogeneous than the objective permitted.

Latino First Grade Pupils, Laidlaw, Word Calling. All Latino first-grade pupils in both Model A and Model B components were taught to read using the Laidlaw Text Series. The objective specified that 80% of these children would be able to read at least 90% of the words appearing in the Laidlaw pre-primer and primer on a Word-Calling test. In terms of the Word-Calling subtest of the Laidlaw Tests, at least 80% of the children should be able to read at least 18 words. The results of this testing are shown on Table 5.4.

TABLE 5.4

Results of Testing First Grade Latino Pupils On
the Laidlaw Word Calling Test (Model A & B Combined)

Mean Score	21.5 items
Standard Deviation	15.0 items
N	107 pupils
No. of Items on Test	40 Items
No. of Items Applicable to Anticipated Year End Level	20 Items
Criterion (90%)	18 Items
Percent Pupils Meeting Criterion	45%

The findings parallel those of the Anglo first graders. Overall performance was better than anticipated; the group mean of 21.5 items indicated that many pupils were achieving at levels higher than anticipated for year end. However, only 45% of the pupils met the criterion of 18 items correct. These results suggest that the performance of pupils is more heterogeneous than anticipated by program planners, with many students doing superior work but about half not doing as well as the criterion specified.

Second-Grade Anglo Pupils Reading Bank Street and Sullivan Reading Materials. Evaluation of the reading performance of Anglo second-grade pupils was complicated by a decision to depart from Bank Street materials and use the Sullivan Program for the slower group. There was no corresponding change in the specification of performance objectives, so only partial evaluation is now possible.

The objective for second-grade Anglos stated that half the Anglo pupils should be completing the Level 2, part 1 Reader of the Bank Street Series. The pupils who used Bank Street throughout the year were selected to be the top half of the Anglo second graders. One would, therefore, have anticipated that virtually all of these pupils should have had mastery of Level 2, part 1 materials. However, when any select group such as this one is observed, the possibility of statistical regression is raised. A few pupils who did not reach the objective would be likely to be found in this select group even if the program functioned perfectly.

The performance of the superior group of second graders on the Bank Street Word-Calling test is shown on Table 5.5. As can be seen, the level of performance obtained is short of that anticipated for this group of pupils. The mean score of 46.4 obtained was somewhat better than the criterion developed by the program planners, but only 64.7 of the pupils in this superior class attained or exceeded this criterion.

TABLE 5.5

Results of Testing Talented First Grade
Anglo Pupils on the Bank Street Word Calling Test

Mean Score	46.4 items correct
Standard Deviation	13.6 items
No. of Cases	34 pupils
No. of Items on Test	69 items
No. of Items Applicable to Year End Criterion	49 items
Criterion (90%)	44 items
Percent Meeting Criterion	64.7% of the pupils

The slower group of pupils worked with the Sullivan programmed materials and their accompanying readers. This course of study was designed to permit pupils to develop skills at their own pace. The pub-

lishers avoided dividing these materials into grade levels, but program staff judgment suggested that the four books used with the slower second-grade class were at the pre-primer and primer levels.

Performance of pupils using these materials is shown on Table 5.6. As can be expected with materials in which the student works at his own pace, attainment was variable. The standard deviation is larger than the mean of 4.9 pointing to a very skew distribution. Examination of the individual scores showed that at year end, seven pupils, or just under one-third, could not read a single word on the Word-Calling test. The next fourteen children read between one and five items correctly. The next 11 pupils were scattered between six and twelve correct responses. One pupil was able to read every word on the test.

TABLE 5.6

Results of Testing Slower Anglo Pupils on the Sullivan Word Calling Test

Mean Score	4.9 words
Standard Deviation	5.1 words
No. of Pupils Observed	32 pupils
Maximum Possible Score	20 words

Latino Second-Grade Pupils, Laidlaw, Word Calling. All Latino pupils in the second grade continued to study the Laidlaw Readers. Results are shown on Table 5.7. The reading objective for this level specified a distribution of scores which is shown on the table (50% completing Level 2, part 1; 30% at Level 1; and 20% completing the Primer Level). The equivalent in words on the test is shown on the table.

TABLE 5.7

Results of Testing Latino Second Grade Pupils on the Laidlaw Word-Calling Test

Mean Score	25.3 words
Standard Deviation	15.9 words
N	65 pupils
Maximum possible score	40 words

Expected and obtained distribution of scores:

	Cumulative Percent	
	Expected	Obtained
Pupils scoring at least 36 words	50%	44.6%
" " " " 27 "	80%	50.8%
" " " " 18 "	100%	65.4%

Results of testing show that the typical pupil in the class was able to read about halfway through the Level 1 text (25.3 words). Examination of the number of pupils at the cutoff points suggests that program planners' estimates of the achievements of better pupils were close to correct. (44.6% were able to read material through Level 2, book 1 as compared to the anticipated 50%) but pupils having difficulty did not perform as well: 44.6% of all pupils had not yet shown adequate mastery of the pre-primer and primer level texts.

Talented Anglo and Latino Pupils Beginning to Learn to Read in Their Second Language. The proposal did not mandate introduction of reading in the second language. However, the decision was made during the year that more talented pupils would be introduced to reading in their second language as part of their second-language course of study. Results of testing pupils on the Word-Calling tests in the second language are shown in Table 5.8.

TABLE 5.8

Results of Testing Talented Anglo and Latino Pupils in Word Calling On Their Second Language

	Anglos Reading in Spanish (Laidlaw) (2nd grade)	Latinos Reading English (Bank Street) (2nd grade)
Mean Score	29.6	19.5
Standard Deviation	14.9	21.0
N	28	34
Maximum Score on Test	40	69

Talented Anglo pupils found the transition to reading, at least on the Word-Calling Level, to be relatively easy. At the end of one half year of exposure the Anglos in this select group were able to read 29.6 words, which means that they were reading material at Level 1 difficulty.

Results show that learning to read in a seond language was more difficult for the talented Latino group of second graders than it was for Anglos, a not unanticipated result, considering the fact that English, being a non-phonetic language required acquisition of more new skills for Spanish speaking pupils. Learning English required that Latino pupils encounter words with non-phonetic spellings for the first time. The typical pupil was reading at the end of the first-primer level at the end of the year. However, attention should be drawn to the very large standard deviation which suggests a very positively skew distribution. Examination of the results shows that twelve pupils (or nearly one third) could read five or fewer words on the test, but at the other extreme, six pupils were reading well into the Level 2 texts.

Other Subtests, Bank Street Reader Materials. The Bank Street reading test had three subtests in addition to the Word Calling discussed above.

Results for the Sentence Reading subtest of the Bank Street Battery are shown on Table 5.9. They suggest that there may be problems with the items developed. The average first and second graders made errors which stopped testing in items at around the end of the first primer level (41.0). These results confirm the Word-Calling data for the first graders but do not confirm those for the second grade. At the second-grade level, the mean score for Word Calling was nearly two full readers better than that indicated by this sentence reading. The second-grade "talented" pupils, in fact, seemed to have performed slightly poorer than the typical first graders.

TABLE 5.9

Sentence Reading Subtest, Bank Street Materials

	Anglo First Grade	Anglo Talented Second Grade	Latino Talented Second Grade
Mean Book Level Equivalent	41.0 1st Primer (end)	36.8 1st Primer (end)	22.6 1st Primer (Beginning)
Standard Deviation	21.0	18.0	18.9
No. of Observations	62	31	34
Text Maximum	134	134	134

The data for Latino pupils indicated that, on the average, they were able to read sentences of English up to about the end of the end of the first primer (of the two in the reading series). This was a confirmation of the reading level observed in the Word Calling test.

The irregularity of these results suggest that there may be problems in the test developed or some aspect of its administration to the second graders. Correlation of the Sentence reading score with the Word Calling also suggests the presence of a problem. It was -0.40 (Pearson r, df = 31, $p<.05$) suggesting that, among talented Anglo second graders, pupils who did well on Word Calling did poorly on the Sentence reading.

The third part of the Bank Street Reading test, Pictures, was an examination of 18 items in which pupils had to choose one of three words which went with a picture. As this test demanded both decoding the words and understanding the relationship of the word to the picture, it was not possible to go directly from items to a score in terms of reading level. Results for this testing must be regarded as a baseline against which performance of pupils in the program in subsequent years can be compared. As can be seen in Table 5.10, the test strongly distinguished between first grade and talented second grade pupils, with the first grade mean at 8.53, the second grade mean at 16.3. Examination of the distribution of pupil scores at the two levels is instructive. The scores were bimodal at the first grade--many pupils were clustered around a score of 3, which is a <u>below</u> chance performance, and a second group was clustered around a score of 15. These results suggested that a given pupil either had acquired the skills necessary to carry out the activities demanded by this subtest, and acquired a substantial score, or had not acquired the skill, and functioned at about chance level. Second-grade pupils found this subtest to be quite easy. All pupils but two completed nearly

all items correctly.

TABLE 5.10

Performance of First Grade and Talented Second-Grade Anglo Pupils on the Pictures Subtest of the Bank Street Reading Test

	Anglo First Graders	Talented Anglo Second Graders
Mean	8.53	16.3
Standard Deviation	5.8	3.5
No. of Observations	62	34
Test Maximum	18	18

Item analysis showed that each item in the Pictures subtest was correctly answered by half or more of all pupils tested. All items showed good overall correlation with total scores with $\phi = 0.7$ or more ($\phi.05=.20$) In the few items where correlation dropped below this value, virtually every pupil had made the correct response. It was noted that there was no relationship between the level of the Reader and the item's apparent difficulty.

The fourth part of the Bank Street Battery, Paragraph Reading, was used only with the talented second-grade group. Results, shown on Table 5.11, indicated high level of performance--the typical pupil scored 19.7, or did 82% of the items correctly. Item analysis showed that each item was answered correctly by more than half of the pupils. Correlation of individual test items was variable. Phi ranged from -0.1 to + 0.6 ($\phi.05 = .34$). However, the items with unsignificant correlations were answered correctly by virtually every pupil.

TABLE 5.11

Performance of Talented Anglo Second-Grade Pupils on the Bank Street Paragraph-Reading Test

Mean	19.7
Standard Deviation	4.2
N	33
Test Maximum	24

Other Subtests, Sullivan Materials. Results of the examination of pupil performance on the subtests of the Sullivan Reading Battery, other than Word Calling, are shown on Table 5.12. The Sentences subtest proved to be difficult for many children. The mean score of 18.0 represented successful reading of material up through the end of the first of the four levels of these readers. The large standard deviation points to the fact that the distribution was positively skew, because a few pupils were able to read well beyond this point.

Pupils reading the Sullivan materials found the Pictures and Paragraph subtests much easier than the Word-Calling or Sentence-Reading ones. On the Pictures subtest, pupils were able to do about 2/3 of the items. The fact that the Sullivan materials required that pupils performed picture-word matching activities may account for this relatively good result, the best that was observed for any part of the Sullivan tests.

The Paragraph-Reading test, based on the Sullivan story books, also showed relatively high levels of mastery. The typical pupil was able to read and select the correct response on about half of the items, again suggesting mastery at about the level of the second of the four programmed tests.

Item analysis showed that for the Pictures subtest of the Sullivan Battery, all items had correlations (ϕ) in the 0.3 to 0.7 range, significant at about $p < .05$ or better, with the exception of three. (ϕ .05 = .34). These items all had lower correlations because virtually all pupils were able to answer them correctly. The Paragraph test for the Sullivan readers showed similar levels of item quality over 2/3 of the testing with ϕ in the range of 0.3 to 0.8. The last three items showed correlations in the range of -0.1 to + 0.2. Many pupils omitted these items or selected incorrect responses, indicating that they were too difficult for most pupils.

TABLE 5.12

Performance of "Slow" Second Grade Pupils on Parts of the Sullivan Reading Test

	Sentences	Pictures	Paragraphs
Mean	18.0	11	5
Standard Deviation	16.2	2.7	2.0
N	29	32	31
Test Maximum	113	15	10

Other Subtests, Laidlaw Readers. The results of the testing of pupils on the first of the remaining subtests of the Laidlaw readers, Sentence Reading, are shown on Table 5.13. As can be seen in the table, the typical first grader was able to read about half the material in the test (57%) before making errors in three consecutive sentences. Second graders were able to read 63%, and talented second-grade Anglos were able to read over three quarters of the material (77%). These results suggested that first grade pupils were able to read sentences of about the difficulty of the end of the primer. First graders were able to read sentences of about the difficulty of the Level 1 reader, and talented Anglo second graders learning to read Spanish, were able to read material up through the end of Level 1.

TABLE 5.13

Performance of Pupils on the Laidlaw Sentence Reading Subtest

	Latino First Grade	Latino Second Grade	Talented Anglo Second Graders
Mean	37.0	41.5	50.0
Standard Deviation	23.9	24.3	21.2
N	107	55	28
Test Maximum	65	65	65

Results of the Picture test are shown in Table 5.14. As can be seen, there was little change in performance from the first grade to the second grade. The standard deviation is large in comparison to the size of the mean. Many pupils' scores were clustered at the bottom and top of the range of the test, suggesting that if the pupils had the necessary understandings, they could do all the items on the test; if not, they could do none. In the first grade classes, these understandings seemed unconnected with how well a pupil could perform the Word Calling test ($r = 0.02$), but among second graders there was a significant correlation between this test and Word Calling ($r = 0.27$, $df = 62$ $p < .05$). The item analysis showed all items had good to moderate correlations with overall performance on the subtest. Phi was in a range of 0.3 to 0.8 for all items on the test ($\phi .05 = .20$).

TABLE 5.14

Results of Testing Latino Pupils on the Picture Subtest of the Laidlaw Battery

	Latino First Grade	Latino Second Grade
Mean	7.0	7.3
Standard Deviation	5.0	8.1
N	91	74
Test Maximum	12	12

Results of examination of pupils on the fourth subtest of the Laidlaw Tests, Paragraphs, are shown in Table 5.15. Results showed that the typical second-grade pupil was able to complete 81% of the items successfully. Examination of individual correlations of items with total score on the subtest suggested that nearly all items had moderate to high correlation (ϕ 's) with total score. There was one exception which had a low correlation of 0.1, and was very difficult. Examination of this item showed that it was improperly keyed. Table 5.15 shows the corrected group mean before and after correction of the key.

TABLE 5.15

Results of Testing Second Grade Latino Pupils on the Paragraph Reading Subtest of the Laidlaw Test

Mean	12.5 (uncorrected) corrected 13.2
Standard Deviation	2.66 (before correction)
N	72
Test Maximum	16

Discussion

Two separate questions were asked at the beginning of this study: At what level were the pupils reading in terms of a simple Word Calling measure, and what were the qualities of the other tests developed.

The findings based on the Word Calling tests seem clear enough, despite the unanticipated change in the program to using the Sullivan materials for the slower second-grade Anglos:

- Both Anglo and Latino pupils in the All-Day Kindergarten Program have demonstrated that they have learned to read at a pre-primer level in their mother tongue.
- Talented second graders seemed to have little difficulty in beginning to learn to read in their second language: Anglos were able to call words from Level 1 of the Spanish Language Laidlaw Readers. Latinos were able to read at the primer level.
- The mean level of performance of Anglo and Latino pupils in the first grade was about what one would expect. However, performance was more heterogeneous than would be expected from the objectives.
- Despite the change in materials used with second-grade Anglos, it appeared that, at least in Word Calling, there was a consistent pattern. Talented pupils appeared to have come close to performing at levels indicated in the program, but slower pupils had more difficulty in learning to read than the project planners specified in the proposals.

Results of the first administration of the more complex subparts of the reading tests (Sentences, Pictures, and Paragraphs) data suggested that the development and/or administration of these instruments has not been wholly successful.

Examination of the overall performance shows little relationship between these three tests and the simpler Word Calling measure, in which the evaluators have confidence. Distributions (as noted) were frequently very skew, variances were large, and occasionally scores were bimodal, suggesting problems in the construction of the instruments. In addition, some tests did not always show expected grade-level differences which would be expected if they worked properly.

If these subtests are to be used again during the coming year, careful reexamination of the items, directions, and actual classroom procedures used to administer them is necessary.

A second alternative is to eliminate all but the simplest tests, the Word Calling ones, and to introduce standardized reading tests in the pupil's mother tongue at the beginning in those grade levels where it is important to measure skills more complex than Word Calling. Such a measure was introduced for use with the Anglo pupils during the current year. (See Study 6). Similar testing might be introduced for Latino pupils in grade 2 or 3.

Lastly, the evaluation problems encountered in this study suggest that there is need to focus attention on program specification: specifically, if new materials are to be introduced for use with special subgroups of pupils, new objectives need to be written to take into account these changes.

Appendix 5.1
Chandler Criterion Reference
Reading Test

WORD CALLING TEST--CHANDLER READERS
(ALL DAY KINDERGARTEN, ANGLO CHILDREN ONLY)

look

bush

high

down

ride

a

bike

come

money

milk

Appendix 5.2
Bank Street Criterion Reference
Reading Test

PART I$_e$A

IN THE CITY

in

one

three

people

and

houses

down

school

night

good

PART I$_e$B

PEOPLE READ

over

come

who

mailman

mother

have

lunch

books

trucks

high

PART I_eC

AROUND THE CITY

around

jump

with

friends

train

gave

teacher

children

snowman

potatoes

PART I_eD

UPTOWN DOWNTOWN

faster

family

quiet

because

couldn't

please

hurry

backward

electricity

PART I$_e$F

MY CITY

splash

animals

beautiful

pictures

whistle

drink

remember

summer

paint

clock

PART I$_e$G

GREEN LIGHT GO

hopping

broken

eight

creaky

umbrella

poem

orange

cents

west

beneath

PART I$_e$H

CITY SIDEWALKS

bother

bounced

known

boiled

phone

tame

bunch

compound

chew

smoked

PART II$_e$1

IN THE CITY

People are in the houses.
They go up to work.
The street lights go on.

PART $II_{e}2$

PEOPLE READ

All over the city, people read.
The morning sun comes up.
She works in the school.

PART $II_{e}3$

AROUND THE CITY

Dogs like ice cream.
The cat went up the street.
Some potatoes rolled here.

PART II$_e$4

UPTOWN DOWNTOWN

A policeman was Red's teacher.
Let me see your skates.
I could hear the fighting.

PART II$_e$5

MY CITY

A dog had a beautiful big bone.
There is only bread for dinner.
Nina doesn't want a new bear.

PART II$_{e}$6

GREEN LIGHT GO

The man on the radio was talking very fast.

The man who wanted the black puppy was angry.

A boy was standing at the drinking fountain.

PART II$_{e}$7

CITY SIDEWALKS

One day Grandfather said he would have to sell the farm.

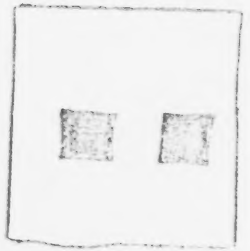
When the truck driver heard Arnie's story, he laughed and laughed.

They build snowmen under dark winter branches.

NAME_____
DATE_____
CLASS_____

Sample

1.

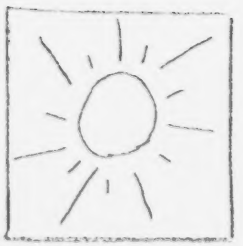


one two three

2.

run boy girl

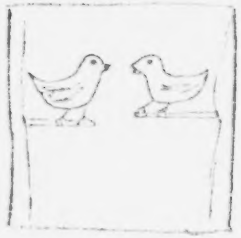
3.



sun come soy

137

4.

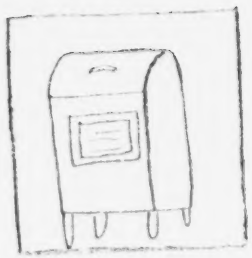


says birds back

6.

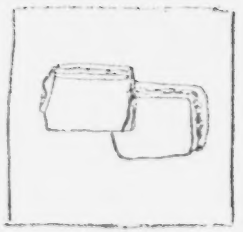
arm far bus

5.



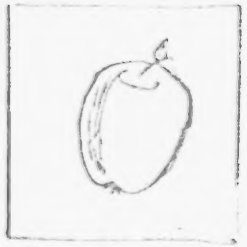
wash mailbox pulled

7.



signs sandwiches legs

8.

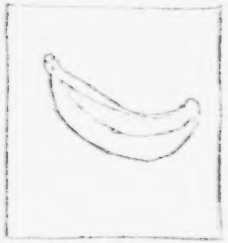


cart apple beans

9.

mouth tightly waved

10.



taught pretend banana

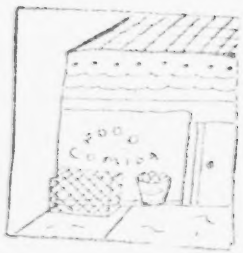
2.

house people light

4.

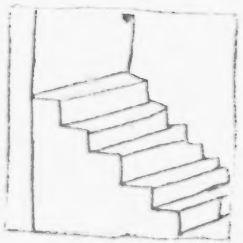
room father truck

3.



three store night

5.



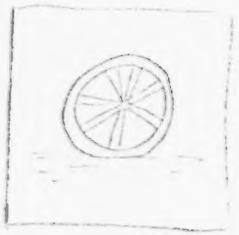
steps ride rain

130

6.

tugboat sidewalk snowman

8.



letter flower wheel

7.

cookies keys door

9.

cloud fox desk

NAME_____
CLASS_____ DATE_____

10.

circles thousand caterpillar

1. People go in.
People go out.
They go in and out of houses.

People go _____ and out of houses.

in go they

2. Many people
and many houses
and many streets
are in the city.

People are in the _____.

many city two

---

3. Boys and girls are in the house.
The lights go out
"Good night","Good night"

The _____ go out.

house and lights

4. The boys and girls go up the street.
They go to school.
One boy runs.

The _____ and girls go to school

boys people good

---

5. The birds fly over the city.
People look up at the sky.
"Look at the birds", they say.

The _____ fly in the sky.

birds school read

6. Girls go in the water.
Boys run in.
Boys and girls play in the water.

Boys run in the _____.

hot play water

8. The policeman took Red to the park.
Many children were there.
They were running all around the park.
They were having fun.

The children saw _____ in the park.

around Red there

7. A little tugboat came to help the big boat.
The tugboat pulled and pulled.
Slowly, the big boat turned.

The little tugboat helped the big boat _____.

pull turn help

9. Dan had a red taxi.
Jerry and his mother wanted a fast ride.
"Please get us to the train" they said.
"I'll try", said Dan.
"Step inside. Have a safe ride"

Jerry and his mother will have a _____ ride.

soft safe step

10. Mary was a little girl in a big family. Jack and Pete were her brothers. Ellen and Jill were her sisters. All of them were bigger than Mary.

Mary had two brothers and two _____.

sisters windows tables

11. Once a fox saw some beautiful grapes. They grew high over his head. They looked big and good to eat.
"Oh, How I would like to eat those grapes", said the fox.

The fox wanted to _____ the grapes.

jump pet eat

12. Donna went by the crocodile as fast as she could. She held on tightly to her father's hand. At last, they came to the creaky door again and they went out into the bright sunlight. "Can I open my eyes now?" said Donna.

Donna was with her _____.

father crocodile whole

13. Mac was the laziest cat in the world. He was a fat gray cat. He likes to sleep all day. He sleeps until everyone in our house is asleep. Then - things are different. He opens his eyes. He looks all around.

Mac _____ up when everyone in the house is asleep.

lazy wakes things

2. The boys and girls go to school.
They work in school.

Boys and girls _____ in school.

work street house

3. People go to work.
They work in stores.
The stores are in the city.

People work in _____.

many stores go

4. Ann's mother is in the lunchroom!
"Hi", says Ann.
"Is, the lunch good?"
"Yes, says Ann's mother.

Ann and her mother are in the
_____.

work lunchroom street

5. Who reads the books at school?
Ben reads the books.

Ben reads the books at _____.

house school lunchroom

6. On a hot day, Roy went on a boat ride. He went with his teacher and his school friends.

His teacher and his school friends went with _____.

grandmother Roy Carmen

8. Danny looked all over the house. He went from room to room. He could not find his little sister.

Danny looked for his _____.

house room sister

7. Jerry and Pete ride to work. They ride in a car on the highway. They ride in the morning.

Jerry and Pete ride in a _____.

work car truck

9. Someone ate a hole in the bread. They left crumbs on the table and ate some cheese.

Someone ate cheese and _____.

table crumbs bread

137

10. Mr. Carlo drives a subway train.
All day long he goes under the city.
People get on and off his train all day.

Mr. Carlo works _____ the city.

drives over under

11. John had a loose tooth.
He forgot all about it when he bit hard into an apple. The tooth hurt because it was loose.

John's tooth hurt when he _____ into the apple.

loose bit hard

12. Kate walked slowly back to her house.
In her house, she got some paper and made a sign. Then she took the sign and went back into the street.

Kate took the _____ into the street.

walked house sign

13. A big tiger was behind the rocks.
A mean-looking tiger.
He looked ready to jump.

"Come on". I yelled. "I'm scared! Let's get out of here". We ran the other way.

The boys saw a mean-looking _____.

giraffe getting tiger

Appendix 5.3
Laidlaw Criterion Reference
Reading Test

PART I_S - A CAMINO DE LA ESCUELA

mira

la

busca

con

no

está

gozar

corre

soy

de

PART I_S - B APRENDEMOS A LEER

bueno

avión

muñeca

hoy

dijo

para

este

queso

pollito

son

PART 1_s- C NUESTROS AMIGOS

amigos

azul

tengo

frescas

libro

ocho

brinca

familia

amarillio

flor

Part 1s-D DEL CAMPO AL PUEBLO

campo

playa

corta

botones

arriba

plaza

enferma

afuera

verde

poco

IIs -A - Camino de la Escuela

1. Ven a jugar.

2. ¿Dónde está Pepín?

3. Soy el papá.

IIs -B- Aprendemos a Leer

1. Aquí está la leche.

2. Hoy vamos a la escuela.

3. La mamá va a leer.

IIs -C - Nuestros Amigos

1. Dos amigos se divierten.

2. Vamos a buscar frutas.

3. Mira las estrellas y la Luna.

IIs-D DEL CAMPO AL PUEBLO

1. Los árboles se ven muy lindos en Campo Rico.

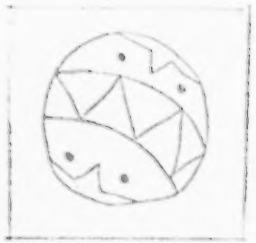
2. Pedrín trajo unos zapatos color marrón.

3. De lejos se oyen las risas de los niños en el patio.

Name_____
(Nombre)

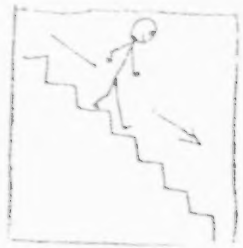
Sample

1.



Pepin bola Rosa

2.



casa baja sube

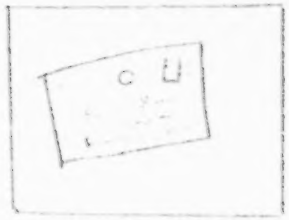
3.

leche feria libro

4.

dormir correr pier

6.



besa corte vide

7.

música zapato traje

5.

frutas nubes gente

2.

corre conta busca

4.

saltar llamar leer

3.

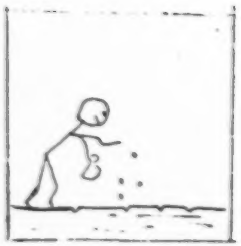
¡A jugar! ¡A buscar! ¡A reir!

5.

aeropuerto chiringa carpintero

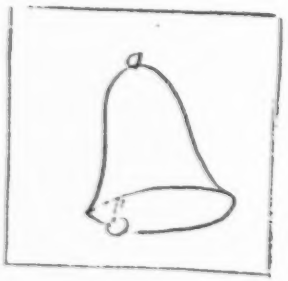
Nombre
Fecha
Clase

6.



recoger sembrar quedar

7.



campana camisa sobre

Ejemplo

1. Pepin, mira.
   Mira a Rosa.

   Pepin,_____a Rosa.

   ven mira esta

2. Lobo, busca la bola.
Mira, Lobo.
Busca la bola.

Lobo _____la bola.

casa busca baja

3. Corre acá, Tito.
Vamos a jugar con Lobo.
Sí, vamos a casa.
A gozar con Lobo.

Vamos a _____con Lobo..

cantar jugar dormir

4. Lobo toma leche.
Tito, ven a tomar leche.
Toma la leche, Tito.

Lobo y Tito toman_____.

buena mira leche

5. Tito mira los animales.
Aquí está la gallina que baila.
¡Ja, Ja, Ja!
Que bonito baila.

La gallina _____.

corre baila mira

148

6. Cecilia y Rosa son amigas.
Cecilia corrió a casa de Rosa con la muñeca.

Ellas son _____.

muñecas amigas bolas

7. Tengo un conejo saltarín.
Sus orejas son blancas.
Su cabeza es muy bonita.
Todos los días juego con mi conejo.

Las orejas del conejo son _____.

rojo cabeza blancas

8. Por tierra viajamos a pie, a caballo, en tren, en automóvil y por otros medios. El barco navega por el agua, y el avión vuela por el aire.

El barco se usa para viajar por -------

tierra agua cielo

---

9. Jose está enfermo. Su mamá llama al doctor por teléfono. El doctor le hace un examen. Dice que José tiene catarro.

---------llama al doctor.

Jose Mamá Wilfredo

2. Ja, Je, Ji.
Mamá mira.
Mira a Meto.

Mamá mira a _____.

miro feliz Meto

3. ¿Dónde está la bola?
Corre, corre, busca la bola.
Está en la casa.

La bola está en la _____.

casa caja escuela

4. -¿Ves a mi perrito? - dijo Chiqui.
-¡Qué bonito es!
¿Toma leche tu perrito, Chiqui?
Sí, aquí está la leche.

El perrito es _____.

niños bonito quién

5. Los niños van a la feria.
Rosa juega con el conejo.
Pepín juega con el caballito.

Los niños están en la _____.

feria casa escuela

150

6. Lucero es un caballito de madera.
Es el caballito de Tito.
Tito va en su caballito.

Lucero es el caballito de _____.

perro Tito gato

7. Es de noche.
Vemos las estrellas.
Vemos la luna.
El cohete sube alto.
Se ve como una estrella
que va a la luna.

El cohete se ve como una _____.

estrella nube luna

8. Después, los niños fueron a un cerro.
Desde allí se veían la siembra y
el río que pasaba por la finca. Fue
entonces que un arco iris se dibujó
en el cielo.

Los niños fueron ---------

al campo al parque a la playa

---

9. ¡Cuanto gozan los niños! Tienen
cuidado de no pisar las plantas.
Unos juegan a la gallina ciega,
otros a la pelegrina y otros brincan
la tablita.

Los niños -------- mucho.

gozan leer estaba

Appendix 5.4
Sullivan Criterion Reference
Reading Test

PART I_s-E_a

SULLIVAN WORD CALLING

am

cat

sit

did

back

ran

to

ring

milk

still

PART I_s-E_b

SULLIVAN WORD CALLING

went

up

live

panted

her

six

will

win

then

shell

PART II_{s-e^1}

ORAL READING OF SENTENCES-SULLIVAN

I am a man.
Nip can sit in a pan.
Ann is patting Tab.
Can this fish fit in that can?

PART II_{s-e^2}

This is the sand man.
Tab sniffs the rat.
The man is catching fish.
Kit is in the kitchen.

PART $II_{s-e}5$

That is a rip in Ann's dress.
A cat can stand on a brick.
It is a red brick well.
Will Ted catch the cat?

PART $II_{s-e}4$

A sick man has to rest.
The pans hang on pegs.
Nip is swimming to the raft.
The ink splashed on Tab.

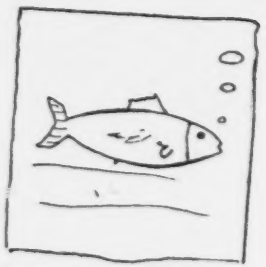
PART II s-e 5

Sam left the ink on the desk.
Bill has a fishing net.
The mixer is next to the hammer.
The man in red is the winner.

PART III s-e

NAME_____
DATE_____
CLASS_____

1.



man fish fat

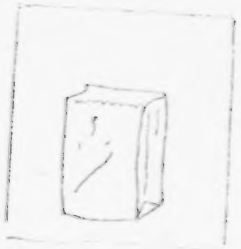
2.

fan thin hand

1.

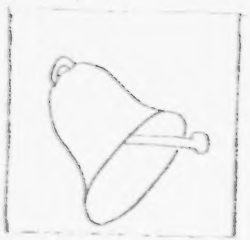
bring kitchen string

3.



best bang bag

5.

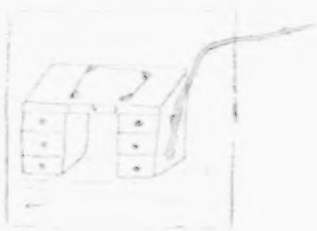


fill spill bell

6.

egg rcsk hcnç

8.

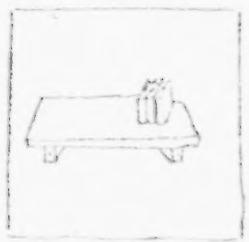


lcmp desk loader

7.

nest left rcft

9.



help shelf next

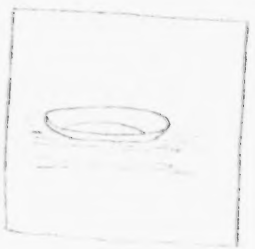
2.

cat hat hit

4.

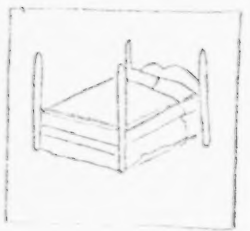
catch chicken red

3.



aish fit rep

5.



splash bed pick

crack stick crash

dinner finger better

7.

leg wing swan

160

Part IV$_{se}$

NAME----------

DATE----------

CLASS----------

SAMPLE

1.

This is a pig, and this is a hat.
The pig can sit on the hat.

The ------- can sit on the hat.

and pig thin

2.

The pig and the cat sat on the mat.
The cat is thin, and the pig is fat.

The fat pig and the thin cat _____
on the mat.

fat sat is

3.

A rat ran past Tab.
Can Tab catch the rat?
No, Sam has the rat in a trap.

_____ has the rat.

Ann Sam Tab

4.

The sled slid with Nip on it.
It slid past Sam and Ann.

Nip and the sled slipped past Sam
and _____.

Nip Sam Ann

5.

Sam tripped. The wig fell on Nip.
The witch mask fell in the grass.

The mask fell in the _____.

witch grass wig

6.

Sam plants a red stick in the sand.
The stick gets bigger. It is a big
red plant.

Sam's _____ is big and red.

red bigger plant

2.

Sam and Mat sit and fish.
Is that a fish that Sam has?
No, Sam has a pan.

Sam has a _____.

fish pan sit

4.

The milkman brings milk to Mat.
The milkman trips.
The milk spills.

The milkman spills the _____.

milk Mat spills

3.

This is the sandman. That is sand in his sack. The sandman is bringing sand to Ann.

The sandman has sand in his _____.

Ann tan sack

5.

This is Sam's ship.
Sam and Mat get on the ship.
Can kit get on the ship?
Yes.

Sam, Mat and Kit _____ on the ship.

can get Mat

6.

Sam is swimming with Ann.
Ann swam to the raft as fast as Sam.
Ann splashed Sam.

Sam and Ann _____ to the raft.

fast swam Sam

Study 6. COMPARISON OF ANGLO SECOND GRADERS WITH PRE-PROGRAM PERFORMANCE OF SIMILAR PUPILS: READING AND RELATED LINEAR SKILLS.

Performance Objective 5.1 of the bilingual Model School programs specified that all pupils would be taught to read in their mother tongue, and that a criterion reference test based on the materials in use would be developed to assess their performance. Evaluation of this objective is undertaken in study 5. During the year a related question was raised: Would the study of Spanish, a second language, have any effect on the first-language performance of the Anglo pupils in the bilingual program?

During the past year, a computerized pupil information system became available for general use. This system permits extracting appropriate comparison groups from historical data. As a result, it became possible to partially answer the question posed above, by comparing the performance of second-grade Anglo pupils enrolled in the bilingual program in 1970-1971 with the pre-program performance of similar pupils enrolled at the Potter-Thomas School during the 1969-1970 school year. As pupils in the pre-program baseline group were examined with Stanford Achievement Test, Primary Battery II, (Harcourt, Brace and Janowich, 1965) that instrument was chosen as the assessment tool.

Procedures

Program Description

During the 1969-70 school year, Anglo pupils in the Model A program at the Potter-Thomas School began learning to read using the Bank Street materials (Offenberg, 1970, p. 70-78). At the end of the first year of operation, Anglo pupils were not reading as well as had been hoped. Retesting in September confirmed this. To improve this situation, the reading specialist at the school was consulted. She suggested that the top half of the students could continue with the Bank Street Readers (McMillan) but that the Sullivan Associates Readers (Webster), a phonics-based set of work books and story-readers, would be more suitable for the slower pupils. These materials were used throughout the year. Teachers also developed and carried out supplementary activities which reinforced the reading skills.

In addition to work in the mother tongue, it should be noted that the "faster" class had been introduced to reading skills in their second language.

Evaluation

Instrument. Both the baseline group and the program participants were examined using the Stanford Achievement Test Primary Battery II. Program participants were subjected to the four subtests most closely related to the reading and writing skills, Word Meaning, Paragraph Meaning, Spelling, and Word Study Skills. Baseline group students had been subjected to the entire battery; however, only the four subtests listed above were used in the analyses.

Method. The four subtests were administered to the English-speaking pupils by the Anglo teachers during the last week in May or the first week in June. Teachers were free to schedule the testing periods to their convenience within that time period with the following limitation: no more than two subtests were to be administered in any one day, and not more than one subtest was to be administered during any one half day (i.e., morning or afternoon session). The tests were, according to teachers' reports, administered strictly within the time allotment indicated by the test makers, and exactly as specified in the testing guide.

The baseline testing was administered by teachers who were not part of the program at the time, hence there was no direct control, by project staff of procedures used. The testing took place during early May, about three weeks earlier in the school year than the data collected for the experimental group. However, delayed school opening and disruptions associated with a teacher strike partially eliminated the advantage which would have accrued to program pupils because they were tested a few weeks later in the year.

In both years the teachers administered the "Practice Test" which accompanies the Stanford Primary Battery II, prior to testing the children. This test was designed to acquaint the pupils with test-taking procedures.

Tests of the baseline year were scored by the publisher. Tests of the experimental group were scored by hand in accordance with the publisher's answer key. Dr. Stanley, of the Testing Department of Harcourt, Brace and Janowich, stated that when a pupil attempted a subtest, but answered no items correctly, he received "credit" for one item and the lowest possible grade equivalent score (personal communication). The hand-scored test results were adjusted and pupils given the same "credit" where a test was attempted.

Subjects. All Anglo pupils in the second grade Model School Program (with the exception of seven absentees) were tested, for a total of 61.

During the baseline year, teachers were advised to exclude pupils who could not possibly attempt the test. It is not known how many pupils were excluded in this manner, but an estimate was obtained by examining the records for pupils who were on-roll at the Potter-Thomas School during the next pupil census in March 1971. These pupils were presumably on-roll continuously, including the days of the May testing. Of the 59 pupils, 9 (15%) were not tested. This figure is different enough from the 10.3% not tested due to absence to suggest that 3 or 4 pupils were excluded from testing last year. The effect of this difference is to bias the results against a favorable outcome for the bilingual program. However, to be conservative, no experimental pupils were dropped.

Results

The data were analyzed using the MANOVA multivariate analysis of variance program. Nine of the pre-program baseline pupils were excluded from this analysis because of incomplete data. There were no exclusions from the program participants. The findings are summarized in Table 6.1. As can be seen the mean of the grade equivalents rose from 1.6 for Anglo pupils completing the second grade in 1970 to 2.0 in the 1971 school year. This result was significant both overall (Multivariate F = 9.1, df 4/97, P<.001) and for each of the univariate F tests.

Table 6.1 Comparison of Preprogram (1970) and Program (1971) Linear Skill scores of second grade Anglos on the Stanford Achievement Test.

	Means and Standard Deviations					
Subtest	Pre Program			Program		
	Mean Raw Score	Grade Equiv.	Raw Sc. S.D.	Mean Raw Score	Grade Equiv.	Raw Sc. S.D.
Word Meaning	6.1	1.7	3.8	9.1	1.8	6.0
Paragraph Meaning	8.6	1.6	6.3	17.9	2.0	10.8
Spelling	2.1	1.5	2.1	6.4	2.2	6.2
Word Study Skills	16.5	1.4	6.3	25.7	1.9	11.1

Analysis

Test of Significance	F	df	P
Multiple F	9.1	4/97	<.001
Univariate Tests			
Word Meaning	8.6	1/100	<.004
Paragraph Meaning	24.6	1/100	<.001
Spelling	18.1	1/100	<.001
Word Study Skills	24.0	1/100	<.001

Discussion

As can be inferred from the pre-program data, the Potter-Thomas serves an inner-city population in which even the native English-speaking pupils function below national norms in reading and related skills. The presence of the bilingual program has not eliminated the problem entirely but seems to have resulted in improved pupil performance.

It is not clear which elements in the program have brought these results about; however, two hypotheses come to mind at once:

(1) The improved teaching of English to Anglos brought about by specification of program goals, and monitoring and supportive services provided by supervisors could have resulted in the improvement.

(2) The language skills developed in learning a second language could have enhanced the performance of pupils in their mother tongue.

If the observed improvement in pupil performance continues, a study designed to test these hypothesis would be valuable.

Study 7. WRITING IN THE MOTHER TONGUE IN THE MODEL A AND B PROGRAM FIRST GRADES.

First-grade pupils' writing skills in their mother tongue were examined in the same way as they had been during the first year of the program. This year, however, first grade pupils in the Model B program were included, as well as those at the Potter-Thomas School (Model A). Results of the 1970 study (Offenberg, 1970, Page 85-97) showed that both Anglo and Latino pupils had mastered manuscript writing at the levels indicated in the objective as amended.

Objective

The proposal for the Model School program as amended specified in Performance Objective 3.7 (Reading and Writing in the Mother Tongue in the First Grade) that at least 60% of the pupils would score at least 80% correct on each of the three parts of the writing tests developed for their grade level in their mother tongue. The three parts were Copying Single Letter, Copying Words and Copying Sentences. All writing was to take place in manuscript in the pupils' mother tongue on the tests developed for assessing these skills.

Procedures

Program

The teaching of writing was similar to that in many elementary schools, except that pupils were taught to write in their mother tongue. Experience charts and material culled from readers were used extensively. Teachers planned and carried out these activities under the guidance of the supervisors; within this range, they were free to develop their own plans. All teachers knew the type of test which would be used and geared their teaching to elimination of the types of errors which would cost their pupils points on the exam. However, pupils were not given specific practice on the examination items.

Evaluation

Instrument. The developmental process and detailed description of the instruments used to assess writing skills of the first-grade pupils appeared in the 1970 evaluation report.

The examination had three parts. In the first part, pupils were to copy six letters printed in manuscript on the test blank. In Part Two they were to copy three isolated words which appeared in the readers the pupils were using. In Part Three pupils were to copy three sentences (including punctuation) which were based on vocabulary appearing in the readers. All material was written and copied using double-space format-lower-case letters filled a typical writing paper line (about 3/8 inch).

The tests were scored character-by-character--the pupils lost one point for each character incorrectly copied, poorly formed and in improper relation to the space on the page. Punctuation marks were counted as characters.

Procedure. The tests were administered by the classroom teachers to pupils in their class. As the test was designed to be similar to exercises frequently used by the teachers, little special instruction was necessary. The pupils were asked to copy the words, letters, and sentences in the spaces provided. Teachers administered Parts 1 and 2 at one sitting, Part 3 at another, usually the next day.

A check on interrater reliability last year showed a very high level of agreement ($r = 0.98$) on a preliminary version of this test. As a result only one rater (one of the program supervisors) scored these tests. Spot check of the scoring by the project evaluator did not uncover any disagreements.

Population. All pupils in the Model A and Model B classes in attendance on the days that the tests were administered were included in the study.

Analysis. The outcome of this testing were tabulated and the results compared with the criteria specified in the objective.

Results

Results of the examination of pupil performance on the writing tests are shown on Table 7.1. Pupils' performance in the Model A component was at about the levels specified by the objective, with the exception of Anglo performance on Part 2, where pupils were to copy single words.

On Part 1, where pupils were to copy isolated letters, 86% of the Model A Anglos and 95% of the Model A Latinos were able to meet the 80 percent-correct criterion. These values are far in excess of the 60% required by the objective.

On Part 2, where pupils were to copy isolated words, fewer than 60% of the Anglo pupils (44%) were able to meet the criterion. However, among the Model A Latinos, slightly more pupils were able to succeed in copying the isolated words than were required by the objective (66%).

On Part 3, where pupils were to copy full sentences, more of Model A's Anglo and Latino pupils were able to meet the 60% performance criterion specified in the objective. Eighty-six percent of the Anglos and 76% of the Latinos were able to copy the sentences, with more than eighty percent of the characters written correctly.

Performance of the Latino pupils in the two Model B first grade classes was not up to the levels expected. Sixty-eight percent of these pupils were able to copy the single letters successfully, which is more than specified by the criterion, but less than 60% (48% and 45%) of the pupils were able to complete the words and sentence copying sections of the test with the specified degrees of accuracy.

Table 7.1 Performance of first grade pupils on the manuscript writing test in their mother tongues.

Anglo Pupils, Model A Writing in English

Test Part	Number of errors for criterion of 80%	No. of pupils meeting criterion	No. of pupils tested	Percent of pupils meeting criterion
Letters	1 error or less	53	62	86%
Words	3 errors or less	27	62	44%
Sentences	9 errors or less	53	61	86%

Latino Pupils, Model A Writing in Spanish

Test Part	Number of errors for criterion of 80%	No. of pupils meeting criterion	No. of pupils tested	Percent of pupils meeting criterion
Letters	1 error or less	55	58	95%
Words	3 errors or less	38	58	66%
Sentences	10 errors or less	45	59	76%

Latino Pupils, Model B Writing in Spanish

Test Part	Number of errors for criterion of 80%	No. of pupils meeting criterion	No. of pupils tested	Percent of pupils meeting criterion
Letters	1 error or less	37	54	68%
Words	3 errors or less	26	54	48%
Sentences	10 errors or less	13	56	45%

While overall results for Model A pupils were satisfactory, the curious finding that many Anglo pupils did poorly on the part of the test judged to be of "middle" difficulty suggested that some exploration was necessary.

Impressions drawn from comparing the word section of the tests completed by Anglo pupils this year and last suggested that during the current year pupils made more errors of alignment than did last year's pupils. More characters were above or below the line they were to be printed on. Further examination suggested that this difference may have been due to the way tests were printed. This year the lines for the word part of the English version of the test seemed somewhat narrower than they were before. As these tests were made from new stencils, it is possible that this small, previously unnoticed variation might be responsible for the increase in errors on this test part.

According to program supervisors, the teaching of manuscript writing in the Model B first grades seemed to have proceeded satisfactorily. Therefore, there is no ready explanation for the Model B performance being below that expected on the two more difficult test parts. Some follow up to determine the cause of the observed differences seems warrented.

Study 6. MASTERY OF ARITHMETIC CONCEPTS AND OPERATIONS IN THE SECOND GRADE OF THE MODEL A PROGRAM.

The Model A Bilingual Education Program attempted to teach the same number skills and concepts taught in the Philadelphia School System as a whole. In the Prekindergarten grade it was felt through first informal, oral examination of micro-objectives would suffice. In the second grade, pupils should be capable of performing more complex operations, warranting formal, written testing. The oral examination of number concepts was shown in study 2. This study focused on the results of the formal testing program of the second grade.

Objective

When examined with a brief test sampling materials used in the texts, pupils would be at the following levels as described in Levels in Mathematics for the Primary Years (School District of Philadelphia, 1968).

- At least thirty percent of the pupils would be doing satisfactory work at least at level 6.
- At least sixty percent of the pupils would be doing satisfactory work at least at level 5.
- The remaining 10 percent, or fewer, would be working at least at level 4.

When instruments for assessing this performance were completed, they were judged to be of "typical" difficulty. Pupils doing satisfactory (C-grade) work at a level, would be able to complete at least seventy-five percent of the items. This means that a pupil meeting the level 4 criterion would be able to complete at least six items correctly, a pupil meeting the level 5 criterion would be able to complete 12 items, and a pupil meeting the level 6 criterion would be able to complete at least 16 items. In addition, the test included seven items from level 7. No prediction was made about the number of pupils who would be able to answer these items correctly.

After the test was developed, program supervisors felt that if pupils were able to complete the appropriate number of items, they would be regarded as having met a criterion, regardless of which items they had answered. Tabulation on an item-by-item basis would also be used to show how many pupils had mastery of each of the types of items at each level.

Procedures

Program

Formal teaching of arithmetic was carried out in the pupils' mother tongue using the SRA Program in New Math texts, with locally developed Spanish adaptation. This was supplemented by other materials suggested in the Levels in Mathematics for the Primary Years. Some number concepts were also taught orally in the second language. Evaluation of the orally taught skills appear in Study 2, which shows per-

formance on the Pupil Log.

Evaluation

Instrument. A test was developed that sampled items appearing in the SRA materials and on the Philadelphia Fundamentals of Arithmetic Tests. The completed test is appended to this paper. The items spanned levels 2 to 7 in Levels in Math. The English and Spanish versions of the tests were identical, except for the language used to instruct the pupils to carry out the items.

Administration. The test was administered to pupils in a group by the classroom teachers, who reported that the instructions were followed explicitly. Administration was at the end of May.

Analysis. The number of pupils attaining each total score, and the number of pupils correctly completing each item, were tabulated. The results were then grouped to show the number of pupils attaining each level of the Philadelphia Curriculum.

Results

Table 8.1 shows the distribution of scores expected and that obtained. The first column shows the levels of the Philadelphia Curriculum sampled on the test. The second column shows the score the pupil would be able to obtain if he completed 75% of the items up through the level indicated. This is followed by the distribution (number of cases and percent) of pupils mastering the respective levels, doing from the highest level of attainment to the lowest. The Table has been constructed so that when the obtained cumulative frequency is higher than that of the expected distribution, the pupils have done better work than is neccessary to meet the objective. Where it falls below, fewer pupils have mastered a level than would have if the objective had been attained.

Although the objective did not state that any pupils would be working at better than Level 6 over a quarter of the Anglo pupils were able to function above that level. This suggests that the brightest Anglo pupils were able to carry out more complex activities and perform at a better level of accuracy than the objective stated.

Table 8.1 Distribution of scores on the arithmetic test

Level of Performance From Philadelphia Guide	Minimum Score for Mastery	Expected Distribution Cumulative %	Obtained Distribution* Anglo(N=53) No.	Cum %	Latino(N=58) No.	Cum %
Level 7 or above	22	0	15	26	35	60
Level 6	16	30	9	45	14	84
Level 5	12	90	9	62	7	96
Level 4	6	100	12	85	2	100
Below Level 4	0	100	8	100	0	100

*Only pupils who were present for both halves of the test are included.

Forty-five percent of the Anglo pupils were able to function at level 6 or above, as compared to 30% stated in the objective, again showing that more of the talented Anglo pupils were able to function at a high level than were anticipated by the objective. However, fewer pupils than expected were able to show mastery at levels five and four (62% vs. 90%, and 85% vs. 100%). Fifteen percent of the pupils were still working below the level 4 criterion (below that predicted for any pupils in the second grade). Summarizing these results, the Anglo pupils were more spread out over the levels than was anticipated when the objective was written, with some pupils doing better and some other pupils doing worse than had been anticipated.

The data for the Latino pupils show that many were able to perform higher-level work in arithmetic than was stated in the objective, and no pupils were working at levels below the minimum stated in the objective. As shown in the table, 60% of the pupils exceeded level 7 and 84% were working at level 6 or better. No pupils were found working at levels below 4, the lowest anticipated in the objective.

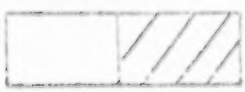
Table 8.2 shows the number of pupils who completed each problem, and the mean percent of pupils who were able to complete the items for a given curriculum level. Examination of the data shows that (except for level 3, which is represented by only one problem), there was a progression from a relatively high rate of problem completion on items of level 2 to a lower rate of correct completions on level 7. This pattern held for both Anglos and Latinos, although at all levels more Latino pupils completed each problem. Individual items may be examined, to see which specific problems were difficult for the pupils.

Discussion

The results showed that Latino pupils had higher mastery of arithmetic skills than had been specified in the objective. Many Anglo pupils had higher mastery rates than anticipated, but 15% had skill levels below the minimum expected for second graders at year end. Examination of the individual items showed that there were a few which were more difficult than others from the same level in the course of study for Anglo pupils. These items involved telling time, multiplication which involved digits above five, and a subtraction which included a zero in the "ones" place.

Comparison of the teaching methods used in the program by the Anglo and Latino teachers, especially those used to teach concepts that were difficult for the Anglos, might result in upgrading of the performance of the slower Anglos pupils.

Table 8.2, Percent of Pupils able to complete each problem successfully*.

Item	Percent Pupils Getting Item Correct: Anglo	Latino
Level 2		
1. 1 +3	93%	100%
2.	66%	91%
3. 	89%	100%
4.	87%	99%
$\bar{x}$ =	84.	$\bar{x}$ = 98
Level 3		
1. 9 −4	65%	91%
$\bar{x}$ =	65.	$\bar{x}$ = 91

*All pupils who were exposed to a test part are included even if they were present for only part of the test. Percents shown are percents of pupils who took test part on which the item appeared.

Table 2 (Cont'd)

Level 4

	Anglo	Latino
1.	80%	97%
2.	75%	90%
3. 20 + 6	73%	89%
$\bar{x}$ =	76.	92.

Level 5

1. 2 +9	85%	97%
2. 45 - 3	49%	82%
3. 6 x7	19%	68%
4. 5 x6	43%	81%

Table 2 (Cont'd)

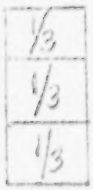
Level 5 (Cont'd)	Anglo	Latino
5. 4 x8	32%	65%
6. 	51%	91%
7.	57%	86%
	$\bar{x}$ = 48	$\bar{x}$ = 81
Level 6		
1. 36 + 4	61%	61%
2. 42 +28	51%	61%
3. 4÷3=	61%	91%
4. 37 -21	48%	70%

Table 2 (Cont'd)
Level 6 (Cont'd)

	Anglo	Latino
5. $8\overline{)16}$	38%	60%
6. $7\overline{)7}$	46%	79%
7. $6\overline{)36}$	34%	64%
	$\bar{x}$ = 48	$\bar{x}$ = 69

Level 7

1. 26 7 84 65	31%	47%
2. 14 15 18	30%	47%
3. 90 −45	13%	48%
4. 65 −32	51%	76%

Table 2 (Cont'd)
Level 7 (Cont'd)

	Anglo	Latino
5. 100 −64	28%	27%
6. 138 −69	18%	24%
7.	42%	92%
	$\bar{x}$ = 30	$\bar{x}$ = 52

STUDY 9. TEACHER PERCEPTION OF PUPIL BEHAVIOR IN THE MODEL SCHOOL PROGRAMS

Last year, teacher perceptions of pupil behavior in the classroom were studied by asking the teachers to rate the performance of pupils using the Devereux Scales (Spivak and Swift, 1967). The major findings were: (a) there were no significant differences between the experimental (Model A) group and a control group, but (b) there was a significant trend for teachers in the bilingual program to rate the behavior of pupils of their own ethnic group as exhibiting more adaptive behaviors in the classroom. There were no differences in maladaptive behaviors.

This year's study of pupil behavior had three aims: (1) to see if the teachers continued to see pupils of their own ethnic group as better behaved, (2) to gather some preliminary data on the behavior of children in the all-day kindergarten program and (3) to gather some data on children in the Model B component.

Procedures

Program

Classes in the Model A program were all team taught, with a native English-speaking teacher and a native Spanish-speaking teacher working as a unit, with double size groups. In the Model B program, Spanish-speaking teachers worked with the children most of the day, but an itinerant specialist, an English as a Second Language teacher, provided special instruction in her subject area.

The team approach at both schools provided opportunities for the pupils to be observed by teachers of the same cultural background as theirs and of the cultural background.

During 1970-1971, the program operated in prekindergarten, kindergarten, first-grade and second-grade classes. Pupils in the higher grades had more contact with the teacher of the second language than did the pupils in the younger grades, leading to the possibility that teacher perceptions would vary by pupil ethnic group, teacher ethnic group and grade level.

Instrument. The Devereux Elementary School Behavior Rating Scale was described in detail in the 1969-1970 Evaluation Report, page 53. It asked teachers to rate pupils on 11 scales, and three independent items describing adaptive and maladaptive classroom behavior.

Method. The Devereux scales were distributed to teachers in January, 1971. Teachers were instructed in their completion. The teachers then completed the ratings and returned them to the evaluation staff within two weeks of the distribution.

Both Anglo and Latino teachers rated Anglo and Latino pupils

with whom they had contact. Five pupils of each ethnic group were drawn from those taught by the team, and were rated. These ratings were all made in the regular Devereux Scale instrument, then were scored as directed by the test maker's instruction.

Subjects. The "subjects" of this study are difficult to specify, because the data consists of subjective judgments by teachers of children. As a result, both the pupils who were rated and the teachers who made the ratings can be regarded as subjects. All teachers involved in the Model A and B programs made ratings. Five Anglo and five Latino pupils were chosen at random by the project evaluator from those taught by each team. These pupils were then rated by both the Anglo and Latino teacher of their team.

Analysis. Analysis of variance for repeated measures was used to analyse the data. Where possible, the means of the samples of pupils rated by each teacher were used as the units of observation (to avoid violation of the assumption of independence of observation). An analysis of variance for repeated measures using the pupil as the unit of observation was used in comparing Model A and B and for comparing the regular with the all-day kindergarten. It was used because there were some cells where all the pupils came from one classroom. This is a compromise analysis because it does not take into account the fact that when there are several teachers, each making several ratings, the assumption of independence of measurement is violated.

University of Pennsylvania "Statlib" programs for analysis of variance for one and two repeated measures were originally used. However, computational errors were found in the "two repeated measures" program. The analyses having two repeated measures were then recomputed by hand. Least squares analyses were used in both cases, to adjust for unequal numbers of cases in cells.

Results

Tables 9.1 and 9.2 show the results of the teachers' rating the pupils on the Maladaptive and Adaptive scales in the Model A program. Results show that there were no significant differences in the amounts of maladaptive behaviors the teachers perceived. (Neither teacher ethnic group, pupil ethnic group, grade level, nor the interactions of these variables, had significant F-ratios.) The results also show that there was one significant difference in the teachers' ratings of the adaptive behaviors; teachers saw pupils of their own ethnic group as exhibiting more of these behaviors ($F=17.7$, $df=1/5$, $p<.01$).

Table 9.3 and 9.4 show the results of the comparison of Model A regular and all-day kindergartens. These analyses were carried out on the individual pupils' ratings rather than class means because there was only one all-day kindergarten class. The analysis was carried out to show that the all-day kindergarten did not produce stresses which would lead to poorer classroom behaviors on the part of its participants. In each of the two analyses this is shown by the main effect "Type of Kindergarten." All other "F ratios" in the analyses were calculated to remove other sources

Table 9.1 Ratings of Samples of Pupils on Pooled Scales of the Devereux measuring "Maladaptive Behaviors in the Model A Program Classes. Analysis is on Means of the Samples of Pupils Taught by Each Team.

Pupil Ethnic Group	Anglo		Latino	
Teacher Ethnic Group	Anglo	Latino	Anglo	Latino
Grade Level				
Prekindergarten and Kindergarten (N=4 teams)	76.7	81.3	72.9	81.2
First Grade (N=2 teams)	95.9	74.0	76.4	74.0
Second Grade (N=2 teams)	100.8	98.2	80.1	91.5

Analysis

Between Teams	Mean Square	df	F	p
Grade level	593.7	2	0.61	NS
Between teams error	977.9	5		
Within Teams				
Teacher ethnic group	376.8	1	1.88	NS
Teacher ethnic gr. x gr. level	61.9	2	0.31	NS
Within error 1	200.0	5		
Pupil ethnic group	13.3	1	0.02	NS
Pupil ethnic gr. x gr. level	284.7	2	0.49	NS
Within error 2	577.0	5		
Teacher ethnic gr. x pupil ethnic group	210.2	1	2.99	NS
Teacher ethnic gr. x pupil ethnic gr. x grade level	45.8	2	0.65	NS
Within error 3	70.2	5		

Table 4.2 Ratings of Samples of Pupils on Pooled Scales of the Devereux Measuring "Adaptive" Behaviors in the Model A Program. Analysis is on the Means of the Samples of Pupils Taught By Each Team.

Pupil Ethnic Group / Teacher Ethnic Group	Anglo		Latino	
	Anglo	Latino	Anglo	Latino
Grade Level				
Prekindergarten and Kindergarten	37.6	28.6	34.7	34.4
First Grade	35.7	30.2	36.4	39.2
Second Grade	40.0	39.4	38.8	41.7

Analysis

Between Teams	Mean Square	df	F	p
Grade Level	94.3	2	1.21	NS
Error between teams	78.3	5		
Within Teams				
Teacher ethnic group	39.6	1	1.15	NS
Teacher ethnic group x grade	9.0	2	0.26	NS
Within error 1	34.4	5		
Pupil ethnic group	50.0	1	1.37	NS
Pupil ethnic gr. x gr. level	20.4	2	0.56	NS
Within error 2	36.5	5		
Pupil ethnic gr. x teacher ethnic group	114.7	1	17.7	.01
Pupil ethnic gr. x teacher x grade	3.1	2	0.4	NS
Within error 3	6.5	5		

Table 9.3 Comparison of All Day Kindergarten and Regular Kindergarten Pupils in the Model A School Program on Devereux Scale Maladaptive. Analysis on the Pupil Basis.

Table of Means

Kindergarten Type	Teacher Ethnic Group		
	Anglo	Latino	Total
Regular			
Anglo Pupils	82.3	107.8	
Latino Pupils	92.7	109.6	
Ethnic Groups Combined			99.2
All Day			
Anglo Pupils	95.0	71.2	
Latino Pupils	74.4	78.4	
Ethnic Groups Combined			78.8

Analysis

Between Pupils	Mean Square	df	F	p
Kindergarten type	4238.7	1	8.7	<.03
Pupil ethnic group	15.1	1	0.2	NS
Pupil ethnic group x class type	371.3	1	0.5	NS
Error between pupils	732.9	18		
Within Pupils				
Teacher ethnic group	408.8	1	4.4	<.05
Teacher ethnic group x grade level	2124.1	1	23.0	<.01
Teacher ethnic group x pupil ethnic group	118.7	1	1.3	
Teacher ethnic group x pupil ethnic group x grade level	797.5	1	8.6	<.01
Error within pupils	92.5	18		

Table 9.4 Comparison of All Day Kindergarten and Regular Kindergarten Model A Pupils on the "Adaptive" Scales of the Devereux.

Table of Means

	Teacher Ethnic Group		
Regular Kindergarten	Anglo	Latino	Total
Anglo Pupils	45.4	37.0	
Latino	31.3	31.6	
Ethnic Groups Combined			35.5
All Day Kindergarten			
Anglo Pupils	41.6	22.6	
Latino Pupils	36.8	27.9	
Ethnic Groups Combined			32.2

Analysis

Between Pupils	Mean Square	df	F	p
Kindergarten type	179.2	1	1.0	NS
Pupil ethnic group	245.1	1	1.3	NS
Pupil ethnic group x grade level	269.3	1	1.5	NS
Error between pupils	182.2	18		
Within Pupils				
Teacher ethnic group	871.1	1	28.1	<.01
Teacher ethnic group x grade level	262.3	1	8.5	<.01
Teacher ethnic group x pupil ethnic group	236.5	1	7.6	<.01
Teacher ethnic group x pupil ethnic group x grade	1.283	1	0.0	NS
Error within pupils	31.0	18		

Table 9.5 Comparison of Latino Pupils in equivalent grade levels of the Model A and B programs; Teacher ratings on Devereux "Maladaptive"

Table of Means

Program	Grade level	Teacher Ethnic Group Anglo	Latino
Model A	Kindergarten	75.8	86.5
	First grade	76.4	72.9
Model B	Kindergarten	100.8	94.9
	First grade	67.6	76.1

Analysis

	MS	df	F	p
Between Pupils				
Program	826.5	1	0.5	NS
Grade level	4536.2	1	3.1	<.10
Program x Grade level	1627.6	1	1.1	NS
Error-between	1447.5	36		
Within Pupils				
Teacher Ethnic Group	105.6	1	0.7	NS
Teacher Ethnic Group x Program	21.7	1	0.1	NS
Teacher Ethnic Group x Program Ethnic Group	0.7	1	0.0	NS
Teacher Ethnic Group x Pupil Ethnic Group x Program	877.3	1	5.4	<.02
Error W	159.6	36		

Table 9.6 Comparison of Latino pupils in equivalent grade levels of Model A and B programs: Teacher ratings on Devereux Adaptive Scales

Table of Means

Program	Grade level	Teacher Ethnic Group	
		Anglo	Latino
Model A	Kindergarten	33.0	33.6
	First grade	36.4	35.7
Model B	Kindergarten	37.0	40.3
	First grade	34.9	34.3

Analysis

	MS	df	F	P
Between Pupils				
Program	65.4	1	0.5	NS
Grade level	7.2	1	0.8	NS
Program x Grade level	198.4	1	0.3	NS
Error B	182.6	36		
Within Pupils				
Teacher Ethnic Group	7.1	1	0.7	NS
Teacher Ethnic Group x Program	8.5	1	0.7	NS
Teacher Ethnic Group x Pupil Ethnic Group	28.4	1	0.5	NS
Teacher Ethnic Group x Pupil Ethnic Group x Grade level	7.6	1	0.7	NS
Error W	62.1	36		

of variance. They should not be interpreted too quickly because there was gross violation of the assumption of independence of observation. While the "Type of Kindergarten" variable has this problem too, it, at least, contains the pooled observations of two teachers in the "All-Day kindergarten" group and four teachers in the "Regular Kindergarten Group."

Focusing on the "Kindergarten Type" variable, for maladaptive behaviors, there was a significant trend for teachers to rate all-day kindergarten pupils as exhibiting less of these behaviors than regular kindergarten pupils. ($F=5.7$, $df=1/18$, $p<.03$). Examination of the individual cell means shows that the all-day kindergarten teachers rated fewer maladaptive behaviors in their pupils than regular kindergarten teachers rated. The only exception was the Anglo pupils as observed by the Anglo teachers. For that combination, the regular kindergarten pupils appeared to be slightly better behaved.

There was no statistically significant difference for the "Kindergarten Type" variable for the adaptive behaviors.

This suggests that all-day kindergarten teachers tended to see "bad" but not any better behavior in their classes than regular kindergarten teachers tended to see in theirs.

Table 9.5 and Table 9.6 show a comparison of kindergarten and first-grade Latino classes of the Model A and Model B programs. These analyses are compromises of the same type noted in the all-day kindergarten - regular kindergarten analysis above--there is violation of the assumption of independence of observation. Only one main effect, the variable "Program," should have any confidence placed in it.

The results show that overall there was virtually no difference between the two programs, on either the Maladaptive ($F<0.6$, $df=1/36$) or Adaptive scales ($F=0.5$, $df=1/36$).

Discussion

The findings reconfirm the trend observed in 1969-1970, that pupils were reported as exhibiting more "adaptive" behavior by teachers of their own ethnic group in the Model A program. It also reconfirmed the finding that there was no difference in the maladaptive behaviors of this group.

This year's findings also show that there was significantly less maladaptive behavior observed by teachers in the all-day kindergarten than in the regular kindergarten. These findings indicate that, at the very least, the all-day kindergarten does not generate situations which are likely to increase the amount of pupil acting out in the classroom.

The third part of the findings shows that Latino pupils in Model B are not significantly different from those in Model A.

Taken together, these findings suggest that there is only one area which requires additional attention. It would be desirable to gain more information about the relationship between actual pupil behavior in the classroom and teacher perception of it. If it is found that pupils are actually exhibiting more adaptive classroom behaviors in classes where their mother tongue is in use, then a strong case for approaching pupils in their mother tongue can be built. If it is found that teacher stereotypes lead to teacher beliefs that pupils of their own ethnic group exhibit more of these behaviors, then staff development may be desirable.

STUDY 10. EVALUATION OF THE ARRIBA COMPONENT: STUDY OF IMPACT ON GRADES, BEHAVIOR, ATTENDANCE, PUNCTUALITY AND DROPOUT RATE.

Grades, classroom behavior, attendance and punctuality were selected as measures which would be useful in assessing the impact of the bilingual program's ARRIBA component on pupil participants. During the first year of program operation the impact of the program on these variables was studied through comparison of the levels of these variables for pupils enrolled in the program with these levels for the same pupils the year before they entered a program of bilingual education. Dropout rates were compared to the overall rate for the schools in which the pupils were enrolled.

This study suggested that pupils' grades and behavior were improved by participation in the ARRIBA program, but attendance, latenesses, and dropout rates were not, when compared to performance of these same pupils the year before they entered this program. The design of the study was a compromise, because pupils who had never attended Philadelphia schools before entering the program had to be excluded from analysis, and the effect of the entire sample's being one year older and in one grade higher was not controlled. In addition, it was felt that some pupils were placed in the bilingual program <u>because</u> they had performed poorly the year before. This situation prevented ruling out statistical regression as the real cause of the findings.

This study sought to compare pupils in the ARRIBA program with the performance of pupils in a baseline of Spanish-speaking pupils in 1969, generated by SKYDAS, a computerized file of all pupil records of the Philadelphia Schools. This approach was much more conservative than that used last year, as the program's process (selecting pupils who need bilingual education most) was likely to have had the opposite bias from the one possible in last year's study: it probably made it <u>more</u> difficult to obtain statistically significant results if the program was effective. This is so because the baseline group probably had some Spanish-speaking pupils who were talented enough to do satisfactory work in English despite the fact that Spanish was their family language. In schools where space in the ARRIBA program was limited, these pupils were less likely to have been encouraged by school staff to enter the program. As a result, this study took a very conservative approach.

A true picture of the level of pupil performance requires combined analysis of this study and the one carried out during 1970.

<u>Objectives</u>

In addition to exploration of pupil performance on the curriculum materials developed for use and tried in the program (See Study 11). The ARRIBA program had the following objectives:

1. Participation in the ARRIBA program would result in improved academic performance; i.e., participants would attain higher grades.

2. Participation in the ARRIBA program would result in improved discipline in the classroom as measured by teacher ratings of pupil preparation and classroom behavior.

3. Participation in the ARRIBA program would result in improved attendance.

4. Participation in the ARRIBA program would reduce the frequency of tardiness of pupils.

5. At the high school level, the frequency of dropping out would be reduced.

For the purposes of the 1971 evaluation the baseline for all these comparisons was the scores of a 10% sample of Spanish-speaking pupils who were enrolled in the schools of District Five during the school year ending 1968. This district has the highest concentration of Spanish-speaking migrants in the city.

Procedures

Program Description

The ARRIBA program served pupils in grade levels 3 through 12. At all levels, grade-level-appropriate courses in Spanish as a first language, Social Studies, Science, and Mathematics were offered in the pupils' mother tongue. English as a Second Language was also available at all sites, although it was sometimes funded through Title I, ESEA.

At one elementary school, the program was administered to a mixed, non-graded class, at the other elementary school pupils were separated by grade. At the junior high school level, pupils attended ARRIBA program classes in the major subject during part of the day, but took minor subjects with Anglo pupils during the remainder of the school day. At the high school level, pupils were able to select from among courses offered by the program and those of the regular high school program.

Evaluation

Sample. A sample of about 20% of the pupils in the ARRIBA program who had been on roll from the beginning of the school year (October) was drawn from those listed in the pupil information system. One hundred and twelve pupils were drawn in this manner.

A baseline of Spanish-speaking pupils, residing in District Five, was generated from SKYDAS, the Philadelphia computerized pupil information system. These pupils were enrolled in the grades served by the bilingual program during the school year ending June 1969. A 10% sample of the baseline was then drawn for evaluation in the grade and behavior studies. All pupils from this sample whose records could be located in the schools were included in this baseline. These two groups were used to compare pupils in the ARRIBA program with those in the baseline group on all variables except dropout rate.

In order to get samples of the dropout incidence, a pool consisting of all baseline group pupils who were Spanish-speaking in the SKYDAS file and enrolled in the District Five high schools was obtained. The dropout incidence of these pupils was compared to that of the entire high school group of the ARRIBA component.

Only pupils who had been on roll during the entire period from October to year end were included in the baseline of the grades and behavior studies. In the high school level "dropout" analysis, all pupils on roll in October and not leaving to attend other schools are included.

Although some pupils in the ARRIBA program attended schools outside District Five, the baseline group was confined to this area of the city. This was done because District Five represented a relatively homogeneous area socio-economically, and was typical of the project population as a whole. It also contained the greatest concentration of pupils being served. Limiting the baseline to pupils who were in this district also facilitated the gathering of the data.

Data Sources. Data came from two sources: the baseline data was culled from the School District's records (pupil packets) which form the official dossier of pupils in this school system. The current data came from reprint of report cards or pupil pockets of the program participants.

Analyses. The data obtained from the pupil records was keypunched, and then the mean of all grades, work habit ratings and deportment ratings were computed for each pupil. In addition, the percent of absence (days absent/days on roll) and percent of lateness (days late/days on roll) were calculated. Least-squares analysis of variance for unequal groups was used to test the significance of all differences except that of the dropout rate differences. Chi-square was used to test the dropout incidence difference.

Results

Elementary Levels

Table 10.1 shows the findings for the elementary school ARRIBA participants and the 1969 baseline group.

The "grade" variable is the mean of all year end grades appearing on the elementary school report card but one, Reading. This grade was excluded from analysis because virtually all pupils in the baseline group had "continuous progress" ratings which described the level of difficulty of materials pupils were reading, whereas program participants were rated on the usual "A = excellent, B = good" type scale.[1]

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[1] The mean grade earned in reading by program participants was 2.5 (midway between B and C), with a standard deviation of 0.95.

Table 10.1 Comparison of Elementary School ARRIBA Program Participants with 1969 Baseline Group.

Variable	Program Participants		Baseline Group		df	F
	N	$\bar{X}$	N	$\bar{X}$		
Grades (A=1,B=2,C=3,...F=6)	31	2.7	79	3.2	1/108	9.9*
Work Habits (A=1,B=2,C=3,...)	30	2.1	81	2.5	1/109	3.8***
Deportment (A=1,B=2,C=3,...)	30	2.4	81	2.7	1/109	2.9***
Absenteeism (% Days absent thru 3rd quarter)	17	7.2%	77	13.7%	1/92	4.6**
Lateness (% Days Late thru 3rd quarter)	17	4%	78	14%	1/93	1.86

* = $p<.01$ ** = $p<.05$ *** = $p<.10$

Table 10.2 Comparison of Junior High School ARRIBA Participants with the 1969 Baseline.

Variable	Program Participants		Baseline Group		df	F
	N	$\bar{X}$	N	$\bar{X}$		
Grades (A=1,B=2,C=3,...F=6)	34	2.5	35	3.3	1/67	16.8*
Work Habits (A=1,B=2,C=3,...)	34	2.4	35	3.0	1/67	6.0**
Deportment (A=1,B=2,C=3,...)	34	2.1	34	2.7	1/66	10.6*
Absenteeism (% Days absent thru 3rd quarter)	29	16.6%	32	15.2%	1/59	0.1
Lateness (% Days Late, thru 3rd quarter)	29	3.2%	32	1.9%	1/59	1.4

* = $p<.01$ ** = $p<.05$ *** = $p<.10$

The analysis was then carried out on these pupil means.

Grades earned were significantly better in the ARRIBA group than they were in the baseline group. ($F=9.9$, $df=1/108$, $p<.01$). The program participant mean of 2.7 represented an average performance of better than "C" work. The baseline group mean of 3.2 indicated average performance of below "C".

Two ratings were made of pupil classroom behavior; one was the teacher's opinion of the pupil's work habits, the other of his classroom deportment. Findings were similar for both measures: there was a trend toward program participants' showing better ratings (lower means on the table) which just missed being strong enough for meeting the traditional level of significance. The work habits rating was just under one-half letter grade better among program participants than among the baseline group ($F=3.5$, $df=1/109$, $p<.10$). The deportment ratings were about one-third letter grade better among participants than among the baseline pupils ($F=2.9$, $df=1/109$, $p<.10$).

Absenteeism and lateness data shown on the table were based on the first three-quarters of the school year, as year end statistics had not yet been computed at the time these data were collected. As will be noted, some of the program participant group pupils have been excluded from this analysis. This was due to the absence of any indication of the "days-present" on fourteen of the pupils' records--a number needed to calculate the percent-days-absent and percent-days-late. Estimates of the missing figures could not be provided because the data on hand suggested some variability in the number of school days included in the "first three quarters" of the school year. Analysis was therefore carried out on the reduced number of 17 cases.

The results show that the bilingual program participants had significantly better attendance than pupils in the baseline. The baseline group showed nearly twice as many days out of school ($F=4.6$, $df=1/92$, $p<.05$). The trend toward fewer latenesses in the ARRIBA elementary level appears at first to be even stronger, the 4% late participants being far below the 14% lateness observed in the baseline group. However, this difference did not attain statistical significance. Examination of the raw material indicated that this was due to very large within-group variances--pupils tended either never to be late, or to be late several times.

Junior High School Levels

Performance data for the junior high school ARRIBA program and Baseline groups are shown in Table 10.2.

The first variable, grades, consisted of the mean of grades earned in academic subjects which made up the junior high school curriculum (English or English as a Second Language, science, mathematics, social studies or history, and foreign language or Spanish as a First-Language). The analysis of variance shown was then computed using these pupil means. The analysis shows that ARRIBA program participants earned substantially better grades

Table10.4 Comparison of Dropout Incidences (October-March) in the ARRIBA Program and in the 1969 Baseline Group.

	1969 Baseline Group (October-March)	1971 Program Participants (October-March)
10th Grade		
No. of Pupils Observed	143	139
No. of Pupils who Dropped	36	9
% of Pupils who Dropped	25.1%	6.5%
$X^2 = 17.0$		P<.001
11th Grade		
No. of Pupils Observed	88	56
No. of Pupils who Dropped	20	3
% of Pupils who Dropped	22.7%	5.3%
$X^2 = 6.5$		P<.02
12th Grade		
No. of Pupils Observed	65	25
No. of Pupils who Dropped	4	3
% of Pupils who Dropped	6.2%	12.0%
$X^2 = 0.02$		N.S.

than the baseline group (F=[illegible], df=1/67, $p<.01$). The typical pupil in the ARRIBA sample had an average which was midway between "B" and "C," by comparison.

At the junior high school level, pupils receive a work habits and deportment rating from each subject teacher, and from his "homeroom" teacher. A mean score for each pupil was computed from the year end work habits and deportment ratings which included those made by subject teachers and the homeroom teachers. As can be seen on Table 2, participants in the ARRIBA component were rated as having significantly better work habits and better deportment than the baseline group. (Work Habits: F=6.0, df=1/67, $p<.01$; Deportment: F=10.6, df=1/66, $p<.01$).

Third quarter attendance and lateness data do not show any significant differences between junior high school ARRIBA pupils and those observed in the 1969 baseline.

Senior High School

Evaluation of the grade and behavior ratings at this level was complicated by the ARRIBA program plan, which permitted pupils to take ARRIBA courses in Spanish (except for ESL) or regular English language offerings. Since pupils were free to take any mixture with which their counselors would agree, it was necessary to develop an analysis which would permit separate assessment of performance in these two types of classes. To solve this problem, two grade and behavior means were computed for program participants: a mean for ARRIBA courses and a mean for regular courses. These two means were each compared to the mean of all academic courses of the baseline group. These means are based on academic subjects only (English or ESL, Sciences, Mathematics, Social Studies, or History, and Foreign Language or Spanish). Commercial courses and electives were excluded from these analyses.

Comparison of the grades earned by program participants in ARRIBA courses with grades earned by baseline students is shown in the first row, "Grades-ARRIBA compared with Baseline." It shows that the mean grades earned by pupils in the special ARRIBA courses were significantly higher than the mean grades of the 1969 Baseline group (F=10.0, df=1/81, $p<.01$). The second row compares the grades earned by ARRIBA participants in regular high school academic courses. As can be seen on the table, there is virtually no difference between these grades and those earned by the baseline group.

The next two rows of the table show the mean behavior ratings obtained. The first row compares the mean ratings obtained by program participants in ARRIBA courses with those of the baseline group. The results show a trend toward ARRIBA students obtaining better ratings (F=3.2, df=1/55, $p<.10$). In contrast, there was no difference between the ratings of behavior earned by ARRIBA pupils in regular classes and those earned by the Baseline group.

Table 10.4 shows the effectiveness of the ARRIBA high school level program in reducing dropout incidence. As can be seen in the table, in the tenth grade, the program was effective in reducing the dropout incidence by nearly a factor of four (χ^2-17.0, df=1, $p<.001$). In the eleventh grade it

Table10.3 Comparison of Senior High School ARRIBA Program Pupils With 1969 Baseline.[1]

Variable	Program Participants N	Program Participants X	Baseline Group N	Baseline Group X	df	F
Grades-ARRIBA Courses Compared with Baseline (A=1,B=2,C=3,...F=6)	57	2.9	26	3.8	1/81	10.0*
Grades-Regular Courses Compared with Baseline (A=1,B=2,C=3,...)	31	3.5	26	3.8	1/55	0.7
Behavior-ARRIBA Courses Compared with Baseline (A=1,B=2,C=3,...)	38	1.6	22	1.9	1/58	3.2***
Behavior-Regular Courses Compared with Baseline (A=1,B=2,C=3,...)	26	1.7	22	1.9	1/46	0.7
Absenteeism (% Total Year)	52	21.6%	26	26.5%	1/76	1.2
Lateness (% Total Year)	52	4.4	26	3.1	1/76	0.7

*P<.01
**P<.05
***P<.10

[1] As all program participants sampled were 10th and 11th grade pupils, baseline data is also confined to these grade levels.

seems to have reduced the dropout incidence by nearly the same amount ($\chi^2 = 6.5$, df=1, $p<.02$).

In contrast, among twelfth graders, the program seems to have had no effect. Although nearly twice as many ARRIBA students dropped as did baseline students, the insignificance indicates that this is a chance phenomenon.

Discussion and Conclusion

This study confirmed most of the major findings of the last year's assessment of ARRIBA program effectiveness, despite the fact that a much more stringent baseline was used in the current evaluation.

(1) Pupil participants clearly earned better grades in the ARRIBA program than they would have earned in regular classes.

(2) There were strong trends (and statistically significant differences) in teachers' ratings of pupil behavior in the ARRIBA program when compared to the baseline group.

In addition, there were three findings not apparent in the first year evaluation report:

(1) The ARRIBA program was effective in improving attendance, but only at the elementary school grade levels. At the junior and senior high school level it seemed to have little effect.

(2) The ARRIBA program was effective in reducing by a factor of four the dropout incidence in the 10th and 11th grades.

(3) Pupils enrolled in the ARRIBA program at the high school level seemed to have as much difficulty with coursework in regular English language classes as did pupils before the initiation of bilingual education. This finding suggests that many Latino pupils at the high school level could benefit from an increase in the number of subjects they study in the Spanish language. This increased program contact might require allocation of additional personnel and dollar resources for this part of the project.

Earlier in this study, it was pointed out that this study was one of a series of looks at an ongoing program. As this point, some ways in which the compromise can be improved in coming years will be explored. In this study, pupils designated in the SKYDAS pupil file as Spanish-speaking have been assumed to be similar in most respects to the pupils served by the ARRIBA program. This needs to be checked. Next year's study would be enhanced if account were taken of the possible effects of additional variables, especially grade level (within school level), sex, and years of residence in the mainland. It would also be enhanced if a more elegant way of analyzing the data were developed, so that the number of individual statistical tests could be reduced.

STUDY II. CURRICULUM DEVELOPMENT FOR THE MODEL SCHOOL AND ARRIBA PROGRAMS.

Operation of the bilingual program during its first year clearly indicated a serious need for curriculum materials suitable for use in all grade levels of the program. As a result objectives were set for the Model A program, Model B program and ARRIBA .

Objectives, Model A

Curriculum Development Objective 1.1 (Proposal Part II, p. 61). Adaptation of Reading Readiness Filmstrip to Spanish, adaptation of Classic Fairy Tales to Spanish, and completion of a set of Phonics for Spanish materials would be completed by the spring of 1971. These materials were begun the previous year, and were used in the elementary school grade levels.

Curriculum Development Objective 1.2 (Proposal Part II, p. 62). The following materials would be developed: social studies units in English and Spanish based on neighborhood experiences for use in the second grade; health units in both mother tongues; second-grade mathematics units, adapted from SRA, to be carried out in the pupils' second languages; teacher's guide for the teaching of a second language; and a set of units for teaching Puerto Rican history and culture at the elementary level.

Curriculum Development Objective 1.3 (Proposal Part II, p. 65). The following tasks would be completed during the summer of 1970: revision of prekindergarten, kindergarten, and first-grade program guides; revision of existing Puerto Rican history and culture program materials for the prekindergarten, and first-grade levels; development of a pilot full-day kindergarten program; development of reading-readiness pattern drills; revision of curriculum checklists or logs; selection of poems to be used in the second-grade poetry objectives; and review (and revision if necessary) of social studies and second-language instructional strategies for all grade levels. These materials would be assembled into a teacher's guide for each grade level.

Curriculum Development Objective 1.4 (Proposal Part II, p. 66). Materials developed for the Model A program would be reviewed for possible use in the Model B program.

Objective ARRIBA

Curriculum Development Objective 1.5 (Proposal Part II, p. 69) stated that existing elementary-school curriculum guides would be reviewed, and an integrated program for Grades 5 and 6 would be developed for use with Spanish-speaking pupils. It also stated that the teaching strategies used in the 1969-1970 year at the junior and senior high levels would be reviewed and revised, making provision for differing levels of student skill.

All of these curriculum development objectives stated that the project director would review the preparation of these materials and approve them for trial when they were satisfactory in her judgment. All stated that preparation or review of those materials necessary to begin the school year would be completed during the summer of 1970 and made available during the

school year at a rate which would permit their trial in the program as part of the regular courses of study.

Six curriculum development teams of two persons each would begin to work on the materials needed for the ARRIBA program, and four such teams would work on the development of curriculum for Models A and B. These teams were to work full time during the summer of 1970. During the 1970-1971 school year three of these teams would work full time on ARRIBA program materials, with the remainder working on a part-time basis.

Procedure

Program

The curriculum development activities described above were undertaken during the early summer of 1970, with various curricular areas being worked on by individuals or teams. During the summer, the curriculum development activities were under the direct supervision of program supervisors, with the project director giving final approval for materials to be completed. During the fall of 1970 a Curriculum Coordinator was appointed in order to relieve the director of most curriculum-development obligations.

The curriculum development operated throughout the year but was subject to two major disruptions. Labor negotiations closed the school twice during the fall of 1970. Prior to, during, and following these activities, curriculum development activities were disrupted.

Evaluation

During the summer and early fall, the assessment of curriculum materials produced by the project staff was subjective, with the project director, supervisors, and curriculum-writing staff making their judgments of acceptability without recording the specific elements which went into their decisions. During December 1970, review of these decisions resulted in the preparation of a curriculum development checklist. Items on this checklist are shown on Figure 11.1. The curriculum development staff was asked to make the units that they produced conform as closely as possible to the criteria included on the checklist.

All materials reviewed after the development of the checklist were rated on the criteria indicated on it so that the initial "expert" judgment of the Curriculum Coordinator was not lost.

A few units in the sciences and English as a Second Language for ARRIBA program were completed in time for partial trial during the 1970-1971 school year. These units all contained criterion-referenced tests. Appendix 11.1 contains the evaluation of the units that were completed. Other ARRIBA program units, completed too late for regular use, were tried informally. They were distributed to teachers, who could use any parts which were relevant to the ongoing classwork, but they were not formally tested with pupil examination and teacher feedback.

Materials developed for use in Models A and B have been tried out, but no formal in-the-classroom assessment has been made. However, it should be noted that evaluation of pupil performance on the objectives tied to these materials appears throughout the Model A and Model B studies.

Table 11.1 summarizes the materials in use at the elementary grade levels of the Let's Be Amigos project. Of the 31 items listed, 21 marked "local" or "locally adapted" were products of the curriculum development process of this project. These 21 items very greatly in length, ranging from three years' work (Hablemos) to supplemental activities. (Classic Fairy Tales). Descriptions of these materials appeared in the 1971-1972 Continuation Proposal of the Let's Be Amigos Project, p. 3.

Table 11.2* summarizes the units developed for the junior and senior high school levels of the project. A description of these materials appears in the 1971-1972 Continuation Proposal of the Let's Be Amigos Project, p. 46.

Curriculum Development Objective 1.1 stated that a Reading Readiness Filmstrip, an adaptation of the Classic Fairy Tales and a set of materials, Phonics for Spanish, would be completed. According to data provided, two of these tasks (the fairy tales and the phonics) were completed, but the filmstrip was not.

Curriculum Development Objective 1.2 stated that social studies units in English and Spanish would be prepared and units on health would be written. Although the teachers developed lessons and activities in these areas, no formal materials have been produced. However, a teacher's guide (Hablemos) for the teaching of Spanish as a Second Language for grades prekindergarten through one was completed. Units for teaching Puerto Rican history and culture were prepared (in cooperation with the Social Studies Department) for the upper elementary levels but material at the lower level has yet to be packaged.

Curriculum Development Objective 1.3 stated that existing curriculum materials for the prekindergarten through first grade would be reviewed. It also stated that an all-day kindergarten program would be developed. These activities took place, and the latest version of the "micro-objectives" (See Study 2) reflects them. However, no separate sets of curricular materials were prepared.

Progress toward the goal of an integrated fifth- and sixth-grade elementary elementary curriculum for the ARRIBA program was made, but the task was not completed. Major emphasis was placed on the social studies area. Six units, four in English and two in Spanish, were completed and are ready for use. The Social studies Office of the School District contributed to the development of these materials, especially the ones in English.

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* Materials listed in Table 11.1 as being for prekindergarten, kindergarten, and first-grade were for use in Models A and B. Materials listed for Grades 3 and above were for use in the ARRIBA program, but are adaptable to the Model School programs when they cycle upward into these grades.

TABLE 11.1 SUMMARY OF MATERIALS SELECTED OR DEVELOPED FOR THE ELEMENTARY GRADES. PREKINDERGARTEN TO SIXTH GRADE AS OF MAY, 1971.

SUBJECT	TITLE	LANGUAGE	LEVEL	SOURCE
Spanish First Language (7)	Introductory Phonics	Spanish	Grade 1	Local
	Phonics Master Sheets	Spanish	Grade 2	Local
	Phonics for Spanish-speaking Children	Spanish	Grade 2	Local
	Laidlaw Series	Spanish	Grade 1	Commercial
	Classic Fairy Tales	Spanish	Grades 1, 2	Locally adapted
	Concept Builders with Write & See	Spanish	K - 1	Locally adapted
	Children's Poems in Spanish	Spanish	Grades 1, 2	Local
Spanish Second Language (3)	Hablemos	Spanish	Pre-K, K, 1	Local
	Hablan Los Ninos	Spanish	K, Grade 1	Commercial
	Children's Poems in Spanish	Spanish	Grades 1, 2	Local
English First Language (6)	Bank Street Readers	English	Grades 1, 2	Commercial
	Chandler Language-Experience Readers	English	K	Commercial
	Phonics We Use	English	Grade 1	Commercial
	Children's Poems in English	English	Grades 1, 2	Local
	Sullivan Programmed Readers	English	Grade 2	Commercial
	Concept Builders with Write & See	English	K - 1	Commercial
English Second Language (5)	Introducing English (Lancaster Series)	English	Pre-K, K, 1	Commercial
	Miami Linguistics Series	English	Grade 2	Commercial
	Bank Street Readers	English	Grade 2	Commercial

TABLE 11.1 CONT'D.

	Classic Fairy Tales	English	K - Grade 4	Locally adapted
	Children's Poems in English	English	Grades 1, 2	Local
Social Studies (6)	Puerto Rico - Environment Geography	English	Grades 4, 5, 6	Local
	Puerto Rico - Influence of Environment on Man (Part II)	English	Grades 4, 5, 6	Local
	Early Settlers of Puerto Rico	English	Grades 4, 5, 6	Local
	La Historia de Puerto Rico	Spanish	Grades 5, 6	Local
	Los Indios de Puerto Rico	Spanish	Grades 5, 6	Local
	La Cultura de Puerto Rico	Spanish	Grades 5, 6	Local
Science (1)	Elementary Science Study Units	English and Spanish	Grades 1, 2	Commercial Locally adapted
Mathematics (1)	SRA New Math	English and Spanish	Grades 1, 2	Commercial Locally adapted
Music (1)	Music for the Bilingual School	English and Spanish	Grades 1 - 6	Local

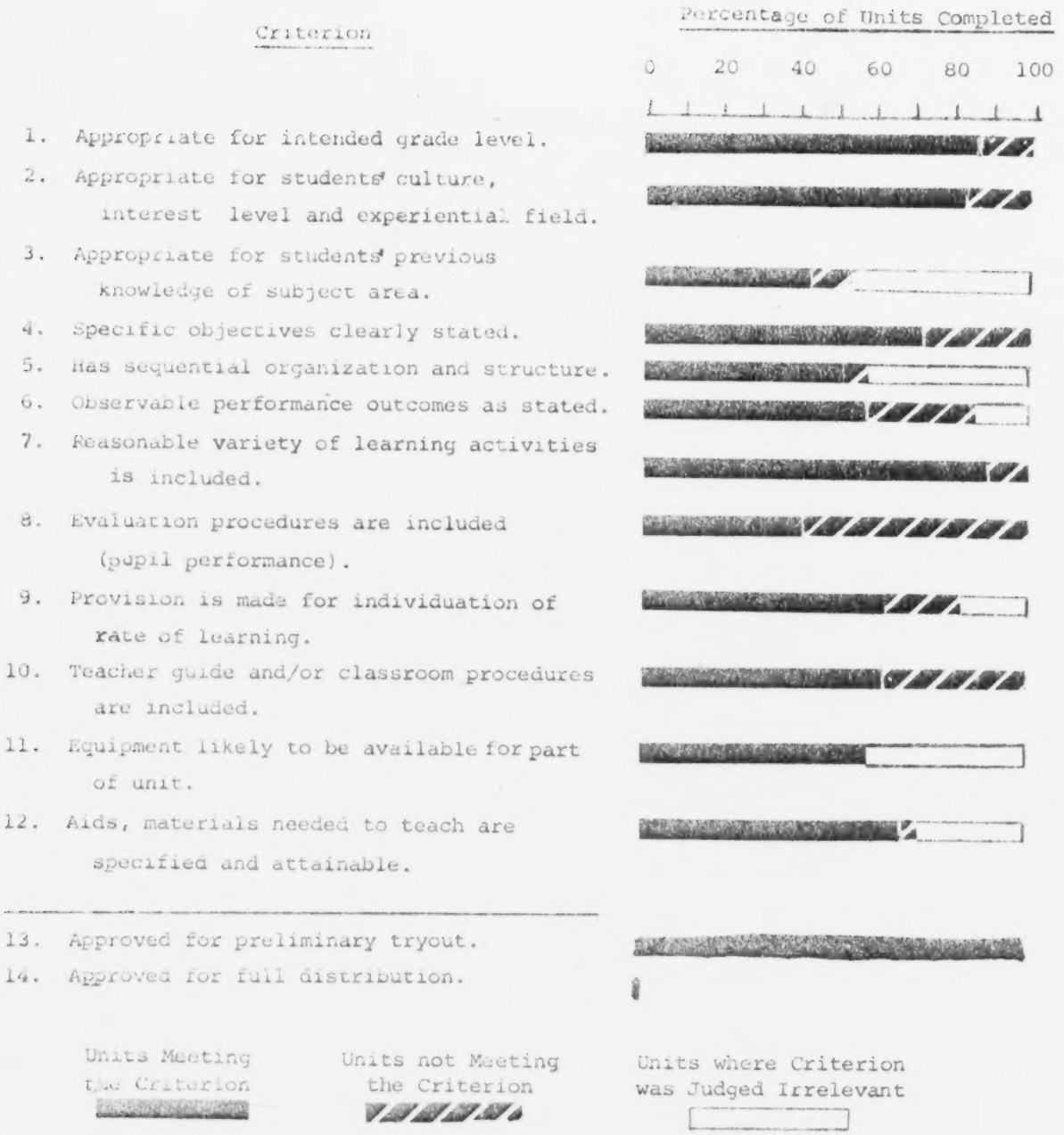
Criterion
Percentage of Units Completed
0 20 40 60 80 100
1. Appropriate for intended grade level.
2. Appropriate for students' culture, interest level and experiential field.
3. Appropriate for students' previous knowledge of subject area.
4. Specific objectives clearly stated.
5. Has sequential organization and structure.
6. Observable performance outcomes as stated.
7. Reasonable variety of learning activities is included.
8. Evaluation procedures are included (pupil performance).
9. Provision is made for individuation of rate of learning.
10. Teacher guide and/or classroom procedures are included.
11. Equipment likely to be available for part of unit.
12. Aids, materials needed to teach are specified and attainable.
13. Approved for preliminary tryout.
14. Approved for full distribution.
Units Meeting the Criterion
Units not Meeting the Criterion
Units where Criterion was Judged Irrelevant

Figure II.1 Evaluation by Supervisor of Curriculum Development of Units Produced.

TABLE 11.2 SUMMARY OF MATERIALS DEVELOPED FOR THE JUNIOR AND SENIOR HIGH SCHOOL GRADES AS OF APRIL 1971.

SUBJECT AREA	TITLE OF UNIT	LANGUAGE OF UNIT	LEVEL	ESTIMATED TEACHING TIME	STATUS AS OF APRIL 14, 1971
Science (8 units)	The Solar System	Spanish	Jr. H.S.	9 weeks	Field tested
	The Atmosphere	Spanish	Jr. H.S.	9 weeks	Field tested
	The Weather	Spanish	Jr. H.S.	9 weeks	Field tested
	Principles of Floating Bodies	Spanish	Jr. H.S.	3 weeks	Completed
	States and Properties of Matter	Spanish	Jr. H.S.	4 weeks	Completed
	Chemical Compounds	Spanish	H.S.	6 weeks	Completed
	Introduction to Biology	Spanish	H.S.	6 weeks	Completed
	General Scientific Principles	Spanish	Jr. H.S.	20 weeks	In Preparation
Social Studies (9) units)	General History of Puerto Rico (Student Booklet and Teacher's Manual)	Spanish	Upper Elem. Jr. H.S.	N.A.	Field tested
	Indians of Puerto Rico	Spanish	Upper Elem. Jr. H.S.	4 weeks	Field tested
	General History of Puerto Rico	Spanish	Jr. H.S.	8 weeks	Completed
	Puerto Rican History - 16th-17th Centuries (Student Booklet and Teacher's Guide)	Spanish	Jr. H.S.	4 weeks	Completed
	Puerto Rican History 18th and 19th Century	Spanish	Jr. H.S.	4 weeks	Completed

TABLE 11.2 CONT'D.

	Puerto Rican History - 20th Century	Spanish	Jr. H.S.	4 weeks	Completed
	Getting Acquainted with My School	Spanish	Jr. H.S.	2 weeks	Distributed
	The Forgotten Minority: Story of the Puerto Ricans	Spanish	Sr. H.S.	2 weeks	In Preparation
	Economic Development of Puerto Rico (Teacher's Manual)	Spanish	Sr. H.S.	N.A.	Completed
Spanish as a First Language (13 units)	Young Puerto Ricans Today (Muckley)	Spanish	Sr. H.S.	1 week each (9 units)	Completed
	In Praise of the Spanish Language (Analysis of a Poem)	Spanish	Sr. H.S.	1 week	Completed
	A Poem by Lola Rodriguez	Spanish	Sr. H.S.	1 week	Completed
	Reading Selections	Spanish	Jr. H.S.	2 weeks	Completed
	Outlining and Composition	Spanish	Jr. H.S.	2 weeks	Completed
English as a Second Language (70 units)	Getting Along in English (Mitchell) (70 units)	English	Jr. H.S. Sr. H.S.	40 weeks	Completed, Partially Field tested

At the junior and senior high-school levels, the review of existing courses of study mandated in Objective 1.3 resulted in preparation of eight science units, nine social studies units, 13 SFL units, and a 40-week course of English as a Second Language. As shown in Table 11.2, all but two of these have been completed, and six have been distributed or field tested.

In addition to these project-oriented activities, The Forgotten Minority, a set of materials about Puerto Ricans, is being prepared in cooperation with the Anti-Defamation League of B'nai B'rith.

Twenty-nine project-developed material packets or sets were reviewed by the curriculum coordinator using the curriculum checklist. (See Figure 11.1). Three of the criteria were met at least 80% of the time: the materials were appropriate for the grade level of the pupils, were appropriate for the cultural background and experiential field of the pupils, and contained a variety of learning experiences. Four other criteria--"Appropriateness for students' previous knowledge," "Sequential organization and structure," "Equipment availability," and "Aides' materials specification and attainability"--were most often irrelevant in the opinion of the coordinator (at least 25% of the time). When they were important, they were met satisfactorily.

Four criteria seemed to present the most difficulty for curriculum developers: clear statement of the unit objectives, adequate statement of performance outcomes, provision for evaluation, and the presence of a teacher's guide or descriptive classroom behaviors.

All 29 of the units reviewed were approved for preliminary trial; none was felt ready for general distribution.

Discussion

The results show that, although a wide variety of curriculum units and materials were developed, there were fewer than indicated in the proposal document. In addition, most were completed too late in the school year for systematic testing. Discussion with the curriculum development coordinator indicated two reasons for this delay: (1) the labor disturbances noted and, more importantly, (2) the inexperience of most people assigned to the curriculum development task. Because of this inexperience, there was need to combine training in curriculum development skills with the writing of the units.

Examination of the data on the units developed in upper elementary-school levels shows that materials prepared were primarily in the social studies area, and not in the integrated comprehensive curriculum as specified in the objectives.

Review by the curriculum coordinator suggested that the major problem with most material sets developed was their use in a program emphasizing accountability: the specification of what the teacher is to do (processes) and what the pupil performance is to be upon completion (products). It appears that some training in accountability concepts is necessary for the curriculum developers.

APPENDIX 11.1 PERFORMANCE OF PUPILS ON EXERCISES IN THE UNITS OF THE CURRICULUM MATERIALS TRIED IN THE ARRIBA PROGRAM

As noted in the body of this study, only a few curricular units were tried out in the ARRIBA program. Those tried were three science units for the junior high school level, The Solar System, The Atmosphere, and The Weather; and a package of ten units (about one quarter of a year's work) in Getting Along in English, a course of study for the junior and senior high schools. This appendix contains the results of the trials of these materials.

All the completed units were tested in junior high schools, as part of the teaching of classes in relevant subjects, science and English as a Second Language.

The plan was for the teachers of the relevant subjects to teach the units, and administer the unit-end tests to all pupils in their classes. The teachers were then to be interviewed by an evaluation staff member to obtain their opinion of the quality of the units developed.

The science units were tried in the two junior high schools participating in the ARRIBA component of the program. When the units were tested the science teachers felt that some pupils in their classes could not read Spanish well enough to complete the exercises, and unilaterally decided to administer the test only to those pupils who they felt could read them. At the time of the testing, about 20 pupils were enrolled in each of these science classes. When the number of pupils approached that number it represented the performance of virtually all pupils. When it lay in the 8 to 10 range, it represented the performance of a select group of pupils who the teacher felt were truly literate in Spanish.

All students who were enrolled in the English as a Second Language class where the Getting Along in English materials were tried, and who were present on the day that the test was administered, completed it. They were all pupils in Stoddart-Fleisher Junior High School.

The findings contained two types of data. Where it was available, the comments made by the teacher who used the units were recorded and the performance of pupils on the unit tests were presented. The test data was shown on an item-by-item basis so that the curriculum writers could review the specific areas of pupil difficulty.

Findings

The Solar System is a unit in Spanish, based on topics usually included in the junior high school curriculum. The teacher who tried the unit (with classes at the Stoddart-Fleisher Junior High School) made the following comments when interviewed by the research staff:

- The unit must be simplified for slow pupils.
- The difficult technical terminology should be avoided where possible.
- There are too many numbers. Analogies should be drawn so that pupils can get a better feeling for the magnitude of things.
- Review is needed to eliminate factual errors and typographical errors.
- The unit exam should be shortened and quizzes be interspersed throughout.
- As it stands, the unit is most suitable for the most intelligent 8th grade pupils.

The review of this unit by the coordinator of curriculum development confirmed this teacher's belief that the unit was too difficult for the background of many pupils.

The performance of two select samples of pupils who could read the test is shown on Table 11.3. The table shows the percent of pupils taking the test in a seventh- and eighth-grade class who were able to complete each item correctly. Examination on an item-by-item basis shows that some items were being answered correctly at rates little different from chance in at least one class, (e.g., Part I, 14; Part II, 4; Part IV, 2, 5, 8, 15). When the unit is revised attention should be given to see if the problem lies with these specific items or whether they point to problems in the presentation of the material. At least one question (Part IV, 15) may reflect an error in the answer key.

The mean scores obtained by the two classes on all four parts of the test lie between 45 and 73% before making any correction for guessing. With no adjustment for guessing, the typical student selected for the test scored in a range close to the traditional "minimum passing" score commonly used in the Philadelphia schools, of 60% on the test as a whole. If guessing was taken into account the performance of students on all parts of the test except that of the 8th graders on Part III fell below this "passing" level.

These findings confirmed the opinion of the teachers and curriculum evaluators that materials were placed at a level of difficulty above that of most pupils.

Table 11.3 Results of Unit End Testing: The Solar System

PUPILS CORRECTLY ANSWERING ITEM

%7th grade N-11 $\bar{X}$-45%	%8th grade N-14 $\bar{X}$-54%	Mean Percent N-2 classes	I. Pareado (Chance - 5%)	
55	64	60	h 1. astronomía	a. grupo de estrellas
63	91	77	k 2. planetas exteriores	b. grupo de estrellas, polvo y gases en el espacio
63	36	50	t 3. heliocéntrica	c. atracción de la Tierra
55	45	50	o 4. geocéntrica	d. banda de luz esparcida a través del cielo
9	54	32	l 5. teoría	e. cambios aparentes en la forma de la Luna
55	45	50	q 6. telescopio	f. obstrucción visual temporera del Sol o la Luna
18	45	32	b 7. Galaxia	g. cualquier pasajero en un vehículo espacial
9	45	27	d 8. "Vía Láctea"	h. estudia los movimientos, posición y composición de los objetos en el espacio
55	64	55	c 9. fuerza de gravedad	i. científico que estudia la temperatura
27	36	32	f 10. eclipse	j. se conocen como estrellas fugaces
63	91	77	n 11. satélite	k. Júpiter, Saturno, etc.
45	54	50	c 12. fases	l. argumento sujeto a prueba
55	54	55	r 13. cuarto creciente	m. altas o bajas
18	9	14	p 14. cometa	n. cuerpo pequeño que gira alrededor de uno más grande
73	82	78	g 15. astronauta	o. Tierra centro del universo
27	27	27	j 16. asteroides	p. objeto celestial que gira alrededor del Sol
36	45	41	i 17. meteorólogo	q. instrumento utilizado en las observaciones
82	73	78	m 18. mareas	r. una cuarta parte de la Luna iluminada
55	54	55	s 19. Luna Nueva	s. tiene su lado iluminado al lado opuesto de la Tierra
27	73	50	a 20. constelación	t. Sol centro del sistema solar

Table 11.3 Cont'd

7th grade $\bar{X}$-55%	8th grade $\bar{X}$-72%	Mean	II. Escoja la contestación correcta (Chance - 25%)
82	57	70	1. Uno de los cometas más conocidos lleva su nombre: b a) Kenneth Arnold b) Edmund Halley c) Daniel Fry d) New England
55	100	78	2. Es el único planeta en el que se sabe que hay vida con exactitúd: a a) Tierra b) Marte c) Venus d) Luna
73	78	76	3. El planeta que gira en dirección opuesta a los demás es: d a) Mercurio b) Plutón c) Marte d) Venus
45	14	30	4. La teoría geocéntrica fué establecida por: c a) Hiparco b) Aristarco c) Ptolomeo d) Copérnico
45	78	62	5. La primera nación en poner un hombre en la Luna fué: a a) E.E.U.U. b) Rusia c) Alemania d) China e) Ninguna
18	86	52	6. Las cataciones del año son ocasionadas por el movimiento de: b a) rotación b) traslación c) corporación d) transición
45	78	62	7. La distancia de la Tierra al Sol en millones de millas es do: d a) 36.0 b) 67.2 c) 141.6 d) 93.0
73	86	80	8. Es el planeta que tiene más lunas: a a) Júpiter b) Marte c) Saturno d) Venus

Table 11.3 (Solar System) Cont'd.

PUPILS CORRECTLY ANSWERING ITEM %7th grade N-11 X-57%	%8th grade N-14 X-65%	Mean Percent N-2 classes	III. Llena los siguientes espacios en blancos:
55	57	56	1. Mercurió es el planeta que se encuentra a 36 millones de millas del Sol.
55	57	56	2. Entre los planetas exteriores se encuentran: a) Jupiter b) Saturno c) Plutón d) Urano e) Neptuno
64	57	61	3. La teoría heliocéntrica nos dice que la Tierra es el centro del sistema solar.
73	86	80	4. La era de los satélites artificiales fué iniciada con el satélite ruso llamado Sputnik.
73	71	72	5. Entre los satélites naturales el que más ha interesado al hombre es la Luna.
36	43	40	6. La Astronomía es la más antigua de las ciencias.
27	43	35	7. Fué en Roma que la astronomía adquirió las primeras características de ciencia.
45	50	48	8. Copernico fué el primero en plantear la teoría heliocéntrica.
73	71	72	9. El Sol es la estrella que ocupa el centro de nuestro sistema solar.
55	64	60	10. Menciona dos clases de eclipses: a) lunar b) solar
64	71	68	11. Un satélite es un cuerpo que gira alrededor de uno más grande.
55	71	63	12. El movimiento de la Luna alrededor de la Tierra tarda 27 1/3 días y se conoce como el mes sideral.
55	86	71	13. El efecto más directo que tiene la Luna sobre la Tierra en relación a las masas de agua son las mareas.
64	64	64	14. Los platillas voladores tienen forma de disco plano y circular como un lente y triangular.
55	86	71	15. La Tierra es el tercer planeta en orden desde el Sol.

Table 11.3 Cont'd.

7th grade $\bar{X}$-73%	8th grade $\bar{X}$-64%	Mean	IV. Diga cuáles de las siguientes oraciones son ciertas o falsas. (Chance-50%)
73	64	69	F 1. El Sol no es una estrella.
64	21	43	F 2. La era de los satélites artificiales fué iniciada por los norteamericanos.
100	93	97	C 3. "Sputnik" es uno de los satélites artificiales.
64	71	68	C 4. El mes sideral tiene 27 1/3 días.
73	50	62	F 5. Mercurio es el planeta que está más cerca de la Tierra.
64	64	64	F 6. Entre los planetas el que más le ha interesado al hombre es la Luna.
91	71	81	F 7. Los platillos voladores sólo se han podido ver en las películas.
64	43	54	F 8. Júpiter tiene 12 lunas y es el más pequeño de los planetas.
82	78	80	F 9. El efecto mas directo de la Luna sobre la Tierra son las mareas.
73	57	65	C 10. La astronomía adquirió las características de ciencia en Grecia.
64	93	79	F 11. El telescopio fué inventado por Copérnico.
73	50	62	F 12. Los asteroides son cuerpos que giran alrededor de uno más grande.
91	93	92	C 13. El hombre ha estado considerando la posibilidad de vida en Marte.
91	93	92	F 14. Plutón es el más cercano de los planetas.
27	14	21	F 15. La fuerza de gravedad es la atracción de la Luna sobre la Tierra.

The Atmosphere

The two teachers who used this material differed somewhat in their evaluation of it. One reported that he was able to use the material as it was prepared, where as the second teacher used it as a supplement to his own presentation, which made extensive use of other sources. The curriculum coordinator's review indicated that he believed the unit presumed a knowledge background beyond that which most pupils would bring to the course. He also felt that objectives of the unit were not clearly stated.

The pupil performance on the unit end test is shown in Table 11.4. The data represents two ninth grade classes. In one class (9th Grade 1), the teacher administered the test to only the most literate pupils in the class. In the second class (9th Grade 2) everyone present was tested. The performance of the pupils is, as expected, markedly different, with the more select group scoring well throughout, but with the complete class averaging from 46 to 68% of the various parts of the test correct before adjusting for chance. As with the previous unit, some items attract attention to themselves by falling near or below chance level in the data of at least one of the classes (Part II, questions 4, 14, 15; Part III question 4). In the case of the complete-the-blanks items, there were some items that were answered correctly by only a small group of the pupils. As the students in both classes seemed to have difficulty with many of the same items, it is possible that they represent topics where the text is less than ideal, or it is possible that they are ambiguous test items. In either case, review is warranted.

The Weather

The teacher who field tested this unit did not make specific comments. The curriculum supervisor suggested that some concepts must be simplified. He also indicated field trips, to supplement the text, would be desirable. The teacher who field tested the unit used it with an eighth grade class. He administered the test to only a select group of pupils who are the most fully literate in Spanish. The results, in Table 11.5 show that at least the "select" pupil group were able to complete the items successfully.

Getting Along in English

Of the 70 units (40 weeks work) prepared in this introductory English course. Fifteen were taught during the current year, and subjected to an evaluation test in February, 1971. Results of this partial testing are shown on Table 11.6. The part of the test which posed the most difficulty was Part V. In this part pupils had to pick the verb form which agrees with the subject. Performance on the whole was barely above chance, and was below chance on one item. The pupils scored the highest on the brief vocabulary test incorporated into Part VII. Scores for other parts fell between these two poles. The results suggest the material in teaching the verb subject agreement skills examined in Part V, may need revision. The teacher who used the unit and the curriculum coordinator did not indicate any specific weaknesses.

Table 11.4 Performance of Pupils on the Atmosphere Unit Test

PUPILS CORRECTLY ANSWERING ITEM

%9th grade 1 N-8 X-98%	%9th grade 2 N-18 X-57%	Mean Percent N-2 classes	EXAMENES DE EVALUACION I. Pareado (Chance-7%)	
100	61	80	g 1. tropósfera	a. cogemos oxígeno
100	44	72	k 2. fotosíntesis	b. presión desde un nivel más alto o uno más bajo
87	33	60	l 3. expiración	c. radiación emitida por el Sol
100	72	86	h 4. barómetro	d. atracción que ejerce la Tierra
100	50	75	m 5. milímetro	e. conjunto de capas
100	72	86	i 6. evaporización	f. tejido muscular que separa la cavidad toraxica de la abdominal
100	72	86	n 7. ionósfera	g. capa en contacto directo con la Tierra
100	67	84	c 8. rayos x	h. instrumento que se usa para medir la presión del aire
100	44	72	b 9. sifón	i. el agua se convierte en vapor
100	72	86	o 10. meteorólogo	j. no tiene líquido (barómetro)
100	50	75	d 11. fuerza de gravedad	k. proceso por el cual las plantas manufacturan su alimento
100	56	78	f 12. diafragma	l. exhalamos (dióxido de carbono)
100	50	75	e 13. atmósfera	m. unidad de medida
87	56	72	a 14. inspiración	n. está eléctricamente cargada
100	50	75	j 15. aneroide	o. estudia la temperatura atmosférica

.....

Table 11.4 Cont'd.

%9th grade 1 N-10 X̄-86	%9th grade 2 N-18 X̄-68	Mean	II. Cierto o Falso (Chance-50%)
90	67	78	F 1. La Tierra está cubierta por varias capas conocidas como la ionósfera.
100	89	95	F 2. El aire no tiene peso ni ocupa espacio.
90	72	81	C 3. Mientras más cerca se encuentran las partículas del aire mayor es su densidad.
80	44	62	F 4. La lluvia, la nieve tienen su origen en la ionósfera.
90	78	84	C 5. Augusto Piccard alcanzó una altura de 10 millas a través del uso de un globo.
90	72	81	C 6. La atmósfera nos proteje contra las radiaciones solares.
80	100	90	C 7. Entre los gases que componen el aire el más importante es el oxígeno.
80	89	85	F 8. El aire no es una mezcla de gases.
80	72	76	C 9. Los gases inertes son inactivos.
90	61	76	F 10. El más abundante de los gases inertes es el nitrógeno.
100	67	84	F 11. No todo lo que tiene peso ejerce presión.
100	67	84	F 12. El barómetro aneroide tiene líquido.
80	61	71	F 13. El barómetro se utiliza para medir temperatura.
70	33	52	F 14. El proceso mediante en cual cogemos oxígeno y echamos fuera dióxido de carbono se conoce como expiración.
70	50	60	F 15. El primer vuelo aéreo fué llevado a cabo por los hermanos Wright.

Table 11.4 Cont'd

%9th grade 1 N-10 $\bar{X}$-78	%9th grade 2 N-18 $\bar{X}$-63	Mean N-2 classes	III. Escoja la contestación correcta (Chance-25%)
100	72	86	1. El océano de aire que rodes toda la Tierra tiene alrededor de: b a) 500 millas b) 600 millas c) 700 millas d) 800 millas
100	52	76	2. El conjunto de capas que componen el aire se conoce como: c a) estratósfera b) ionósfera c) atmósfera d) exósfera
80	67	74	3. La capa que está en contacto directo con la atmósfera es la: d a) atmósfera b) estratósfera c) exósfera d) tropósfera
70	33	52	4. Es la cape en la cual no existe el tiempo meterológico: a a) estratósfera b) ionósfera c) tropósfera d) exósfera
70	83	77	5. La ionósfera es una capa que está: a a) eléctricamente cargada b) llena de peligros c) calmada d) la más cerca de la Tierra
70	61	66	6. Año en que Augusto Piccard llegó a la estratósfera: c a) 1936 b) 1932 c) 1931 d) 1934
90	67	79	7. El primer satélite hecho por el hombre fué puesto en orbita en: d a) 1960 b) 1950 c) 1967 d) 1957
80	72	76	8. El aire que nos rodea es una mezcla de: b a) iones b) gases c) planetas d) satélites
40	39	40	9. Es el gas que constituyo la quinta parte del volumen del aire: a a) oxígeno b) nitrógeno c) helio d) neón e) ninguno de estos

Table 11.4 Cont'd.

70	56	63	10.	De los gases que componen el aire el más abundante es el: a a) nitrógeno b) oxígeno c) kriptón d) neón
80	61	71	11.	El dióxido de carbono es utilizado por las plantas en el proceso de d a) reproducción b) síntesis c) digestión d) fotosíntesis
80	56	68	12.	La palabra inerte significa: b a) actividad b) inactivo c) esfera d) cambio de región
80	67	74	13.	El más abundante de los gases inertes es: c a) kriptón b) xenón c) argón d) radón
80	89	85	14.	Es un instrumento que se utiliza para medir la presion del aire: d a) telescopio b) microscopio c) altímetro d) barómetro
80	72	76	15.	El primero en contruír un barómetro: a a) Torricelli b) Piccard c) Copernico d) Aristarco

.....

N-10 $\bar{X}$-80	N-18 $\bar{X}$46	Mean 2 classes	IV	Completar los siguientes espacios en blancos:
1a - 80 b - 60	50 28	65 44	1.	Los Hermanos Wright fueron los primeros en hacer un vuelo en aeroplano en el año 1903 .
90	61	76	2.	El hilio es el gas más común que se utilize en los globos.
90	39	64	3.	Los frenos de aire fueron inventados por Westinghouse.
80	28	54	4.	La respiracion es un proceso en el cual cogemos oxígeno y echamos fuera dioxido de carbono.
80	50	65	5.	El diafragma es un tejido muscular que separa la cavidad toráxica de la cavidad obdominal.
6a - 70 b - 70	50 44	60 57	6.	El barometro de mercurio y el barometro aneroide son dos instrumentos que se utilizan para medir la presion del aire.

Table 11.4 Cont'd.

90	39	65	7. La presión del aire sobre el nivel del mar es de 14.7 libres.
80	33	57	8. Argón es el más abundante de los gases inertes.
90	44	67	9. El conjunto de capas que componen el aire se conoce como atmosphera.
10a-70	50	60	10. La tropósfera, estrasfera, y la exósfera son
b-70	50	60	los capas que componen la atmósfera.
c-80	50	65	
	50	70	
90	39	65	11. El nitroginó compone casi 4/5 partes del volumen del aire.
70	33	52	12. Tanto como los vientos, las nubes y la lluvia tienen su origen en la tropósfera.
90	44	67	13. Tropósfera es la capa que esta en contacto directo con la Tierra.
90	56	73	14. Augusto Piccard llego hasta la estratósfera en un globol.
15a-80	56	68	15. El Sol emite radiaciones en forma de rayos cosmicas,
b-70	50	60	rayos ultravioletes y rayos X.
c-70	56	63	
80	50	65	16. En el año 1957 se puso en órbita el primer satelite hecho por el hombre.
90	56	73	17. La ionosfera es una capa que está eléctricamente cargada.

Table 11.5 Pupil Performance on Unit Test: The Weather

PUPILS CORRECTLY ANSWERING ITEM

N-8* $\bar{X}$-78%	% 8th Grade Pupils	I. Pareado (Chance-10%)	
	62	i 1. anemómetro	a. se usan para medir la temperatura del aire
	87	a 2. termómetro	b. frío
	87	h 3. pluviómetro	c. se usa para medir la presión del aire
	87	b 4. polar	d. componen la materia
	75	j 5. tropical	e. se refiere al mar
	62	c 6. barómetro	f. su presencia indica lluvia
	87	d 7. moléculas	g. nubes que forman capas muy cerca de la Tierra
	75	f 8. nimbo	h. se usa para medir la cantidad de lluvia
	62	g 9. estrato	i. mide la velocidad del viento
	100	e 10. marítimo	j. caliente

.....

N-8 $\bar{X}$-86%	II. Cierto o Falso (Chance-50%)
62	c 1. La presencia de los nimbos indican lluvia.
87	f 2. El termómetro es un instrumento que se utiliza para medir la presión del aire.
100	f 3. Los cirros son tormentas que se forman en el trópico.
87	c 4. Los tornados se forman en una pequeña área de terreno.
75	f 5. Los huracanes sólo se originan sobre el agua.
87	f 6. El anemómetre se usa para medir la dirección del viento.
87	f 7. El Negociado del Tiempo es una oficina que se dedica a estudiar los astros.
100	f 8. El pluviómetro se usa para medir la temperatura del viento.
100	f 9. El término polar se refiere a las zonas cálidas.
75	c 10. El calor del Sol hace que el agua se condense.

*Varying numbers of pupils were subjected to the four parts of this test. The number of cases is shown for each part.

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Table 11.5 The Weather Cont'd.

N-15
X̄-78%

III. Blancos (Chance-25%)

87 1. La oficina que se encarga de buscar información sobre las condiciones del tiempo se conoce el (negociado de tiempo).

93 2. El (pluviómetro) se utiliza para medir la cantidad de lluvia.

80 3. Los (nimbos) son nubes que indican lluvia.

80 4. La presión del aire se mide con un (barómetro).

80 5. El anemómetro se usa para medir la (velocidad) del viento.

73 6. El termómetro se usa para medir la (temperatura) del aire.

67 7. Los (nimbos) son nubes que están muy cercas a la superficie de la tierra.

87 8. Los (tornados) son tormentas que se forman en una pequeña área de terreno.

73 9. Los (huracanes) son tormentas que se forman tanto en el agua como en la tierra.

80 10. El calor del (Sol) hace que el agua se (evapore), esta agua va a la atmósfera y forman las (nubes).

.....

PUPILS CORRECTLY ANSWERING ITEM
N-10 % 8th
X̄-72 Grade Pupils

IV. Escoge la contestación correcta: (Chance-25%)

90 1. Se usa para medir la velocidad del viento: b.

a) pluviómetro b) anemómetro c) termómetro d) barómetro

90 2. Las nubes de color oscuro muy cerca a la superficie de la tierra: d .

a) estratos b) nimboestratos c) estratocumulos d) nimbos

80 3. Un frente frío se origina mediante el choque de: a .

a) una masa de aire frío con una de aire cálido
b) una masa de aire tibio con una de aire cálido
c) una masa de aire cálido con un frente húmedo
d) ninguna de éstas

70 4. Se utiliza para medir la temperatura del viento: b .

a) barómetro b) termómetro c) pluviómetro d) anemómetro

90 5. La presión centro de un tornado es: a .

a) baja b) alta c) media alta d) media baja

Table 11.5 Cont'd.

80 6. La diferencia entre un tornado y un huracán es que: c .

a) los tornados nunca se originan sobre el mar
b) los huracanes nunca se originan sobre la tierra
c) los huracanes abarcan un área mayor que un tornado
d) los tornados abarcan un área mayor que un huracán

70 7. Una región tropical se caracteriza de la manera siguiente: a .

a) la temperatura es más o menos constante todo el año
b) nunca llueve
c) las temperaturas son muy frías
d) ninguna de éstas

60 8. La temperatura en los lugares cercanos al mar comparada con los lugares mediterráneos: d .

a) es más alta en al verano y más baja en el invierno
b) es más baja en el verano y en el invierno
c) es más alta en el verano y en el invierno
d) es más baja en el verano y más alta en el invierno

30 9. El viento se forma mediante el movimiento del aire de: b .

a) un lugar de presión baja a uno de presión alta
b) un lugar de presión alta a uno de presión baja
c) un lugar de presión alta a uno de presión más alta
d) un lugar frío a uno caliente

60 10. El clima detrás de una montaña es: d .

a) frío y húmedo
b) frío y seco
c) cálido y húmedo
d) cálido y seco

Table 11.6 Performance of Pupils on the 15th Lesson Test - Getting Along in English

PUPILS CORRECTLY ANSWERING ITEM

Junior High, Combined grades
N-44
$\bar{X}$-75%

I. Select the word that completes the sentences: (Chance-50%)

79 1. He wants a (can, cans).

79 2. They have 97 (piece, pieces) of cake.

68 3. How many (orange, oranges) do you want?

77 4. Jose doesn't have a (dollar, dollars).

.....

$\bar{X}$-74%

II. Fill in the blank with a or an: (Chance-50%)

73 1. An apple costs a dime.

89 2. Eleanora has a projector.

73 3. He wants a hamburger.

66 4. I want an orange.

70 5. Do you have an egg?

.....

$\bar{X}$-64%

III. Choose the word that fits the sentence: (Chance-33%)

64 1. A quart of (apples, milk, eggs) costs 33 cents.

52 2. Mrs. Rodriguez wants two (pounds, quarts, gallons) of hamburgers.

66 3. A pack of cigarettes costs 50 (hamburgers, cents, dollars).

72 4. A steak (costs, weighs, wants) 3 pounds.

.....

$\bar{X}$-75%

IV. Change the names to pronouns, he, she, or they: (Chance-33%)

75 1. Maria wants a new boyfriend. (she)

75 2. Juan weighs 330 pounds. (he)

75 3. Miguel and Angel want to get a record player. (they)

.....

Table 11.6 Cont'd

$\bar{X}$-52%	V. Circle the correct form of the verb: (Chance-50%)
32	1. Manuel (<u>has</u>, have) 2 dollars.
68	2. Do you (<u>want</u>, wants) ice cream?
50	3. Does she (has, <u>have</u>) a pencil?
59	4. I (wants, <u>want</u>) a jar of peanut butter.
.....	
$\bar{X}$-75%	VI. Write <u>more</u> or <u>less</u> in the blank according to the picture. Pictures show a box of cereal costing 59 cents, gum for 5 cents, soup can for 19 cents, coffee can for 98 cents, and a carton of milk for 33 cents. (Chance-50%)
84	1. A carton of milk costs <u>more</u> than a can of soup.
73	2. A pack of gum costs <u>less</u> than a can of coffee.
73	3. A box of cereal costs <u>more</u> than 33 cents.
70	4. Milk costs <u>less</u> than coffee.
.....	
$\bar{X}$-91%	VII. Match the word with its picture: (Chance-20%)
100	1. Sandwich
82	2. Record player
95	3. Egg
84	4. Typewriter
93	5. Ice cream

Study 12. PRINCIPALS', PARENTS', AND ARRIBA PUPILS' PERCEPTIONS OF THE BILINGUAL PROGRAM.

As part of the ongoing evaluation process, the proposals for the Model School and ARRIBA programs stated that feedback would be obtained from principals, pupils, and parents.

Results of the 1969-1970 survey of principals (Offenberg, 1970, p. 117) showed that they all felt the program was "good" or excellent" and that most wanted it to expand, to accommodate more pupils in their schools. All who wanted expanded programs agreed that more teachers with skills provided by the summer institute would be appropriate additions. Seventy-one percent of the principals thought the program supervision was "excellent" or "good". The remaining 29% thought it was "fair". When the principals were asked to rate teachers on six variables, the results were highly favorable, with 91% of all ratings made in the "good/excellent" category.

This year, in addition to the principals' views, both the pupils of the ARRIBA component and parents were surveyed in order to determine their views of the program.[1]

Procedures

Principals' Questionnaire

Instrument. The instrument for assessing the principals' evaluation of the program was the questionnaire attached to this paper (Appendix 12.1). It is essentially the same as used in the 1970-1971 school year, except for one question which asked the principals to indicate whether there were any changes in the degree of understanding of the program goals on the part of the parents, pupils, and teachers in their school. As was the case last year, all questions permitted the respondent to comment, qualify or modify his answers. The questionnaire concluded with a place for the principals to rate teachers' performance.

[1] Teacher views were obtained through a series of staff meetings in which the program faculty were asked to describe their needs and problems. These meetings were held in January and February, 1971. A member of the project administration staff made notes and was supposed to present a distillation or minutes for the group, teachers of English as a Second Language with the ARRIBA program. The staff member who was to collect this data is no longer on the project staff.

ESL teachers' concerns were: the need to obtain improved instructional space in the schools (some classes were not being held in regular classrooms). The need to simplify rostering procedures, and the need for better access to project supervisory staff.

Method. A copy of the questionnaire was mailed to the principal of each school during April, 1971 with a return envelope and a cover letter. The cover letter assured the principals that their individual ratings and comments would be kept confidential. The principals were asked to return the questionnaires to the Office of Research.

Subjects. All principals of the schools having Model A, Model B, and ARRIBA components were sent questionnaires. One principal failed to return the questionnaire, and one did not complete the items.

Analysis. The principal ratings were tabulated. Comments made by principals to open-ended items were summarized.

Parents' Questionnaire and ARRIBA Pupils' Questionnaire

Instrument. The parents' questionnaire is shown in Appendix II of this paper. It was designed to tap in a very simple way the parents' perceptions of the program, whether they were committed to having their children continue in bilingual education, and whether they had had contact with the teachers and staff; and to give parents an opportunity to express their praise, criticism or other comments in an open item. This questionnaire was originally intended to be used at meetings of parents and other community people interested in the program. Thus, it contained an identification section so that the questionnaires belonging to parents of pupils in the program could be separated from others. When this method of administration was abandoned, the same questionnaire was used, with the identification section intact. This reduced the anonymity of the responses. Parallel English and Spanish versions of the questionnaires were developed for use with English-and Spanish-speaking parents.

The pupil questionnaire is shown in Appendix III. It asked pupils to evaluate the program, asked if they would like to continue in the program, and if they felt they were learning enough English. It ended with an open item in which pupils could express their needs or critisism. The questionnaires were printed in English on one side and Spanish on the other.

Procedures. Parents' questionnaires were distributed to teachers who gave them to the pupils to take home. When they were returned, teachers shipped them to the project evaluator. Pupil questionnaires were delivered to the teachers by a member of the research project staff. The teachers distributed them and asked the pupils to complete and return them. At half the sites, the researcher or a project staff member observed this questionnaire completion activity. Where this was impossible, the teacher returned the completed instruments to the researcher by mail. The parent data were collected in April, the pupil data in May.

Analysis. The results of the pupils' and parents' questionnaires were tabulated, and a summary was made of the responses to the open-ended question.

Results

Principals' Questionnaires

Ten of the twelve principals responded to the principals' questionnaire. The eleventh, the principal of the McKinley School, noted that he had prevented the program from functioning as planned. He returned his questionnaire uncompleted. One junior high school ARRIBA principal failed to respond.

The first question asked the principals to rate their satisfaction with the program in their schools. Four of the ten respondents said they were "very satisfied," six indicated they were "somewhat satisfied," none reported that they were "somewhat" or "very dissatisfied". Of the six who were only "somewhat satisfied," four ARRIBA program principals commented. There were two comments stating that greater articulation between the program and the rest of the school, was needed especially with regard to faculty understanding and planning by the curricular departments. Two responded that more help from the central project staff was needed. One stated that the teaching of English needed improvement.

The second question asked principals whether the program should be expanded to reach more pupils, remain the same size, be reduced or be eliminated in their schools. Seven thought it should be expanded, two felt it should remain the same size, and one asked for a reduction. None asked for elimination. Those who asked for expansion and commented, cited anticipated increase in the Spanish-speaking pupil population. The principal who asked for a reduction said he felt that "Model B" needed to be reevaluated.

All seven principals who wanted expansion of the program indicated on the third question that more teachers with Bilingual Training Institute backgrounds would be helpful in bringing about this expansion, but one commented that the Foreign Language Office needed to provide more inservice training.

Question four asked principals to rate the special supervision their teachers received from the project staff. Two felt it was excellent, three felt it was good, two stated it was fair, two stated it was poor. One failed to respond. Principals who commented said that there was not enough supervision (three responses) or that a regular schedule of supervision was desirable. One noted that he disagreed with the supervisor's concept of "supportive help."

When asked if there were ways in which the summer institute could be improved, six of ten principals indicated that they felt improvement was possible. Two respondents suggested that classroom management could be dealt with more effectively. Two wrote that more work with curricular areas would be helpful. One respondent suggested that the institute could be used to identify effective organizational patterns. Another made the closely related comment that the bilingual teachers are "part of the total school and must not develop into separate entity," and that this fact needed more

emphasis.

The sixth question asked principals whether there was increased awareness of program goals on the part of parents, students and school faculty. Only the six principals who had operational programs in 1969-1970 were asked to respond. All six felt that there was increased awareness on the part of parents and faculty. Two felt that they could not judge whether pupils were "more aware." One who noted improvement cited the work of a counselor and a classroom aide who were Spanish speaking as being helpful.

The next question asked the principals to note anything else they wished to bring to the project director's attention. Some of the responses were repetitious of comments made earlier. Among those comments which contained new material, the following were mentioned: More evaluation is needed, especially in order to ascertain the program elements which contribute to "pupil gains in skills attitudes and motivation." A policy is needed for handling unsatisfactory service of bilingual teachers. "Greater use of resources - more team work is needed so that other classrooms can be supported."

The principals' questionnaire ended with a request that the principal rate the teachers in the program in each of six areas of professional or interpersonal competence.

Table 12.1. Principals' rating of teacher performance.

	Percent of Teachers in the Program Receiving Each Rating (N=42)			
	Excellent	Good	Fair	Poor
1. Rapport with students in his/her class	65%	31%	2%	2%
2. His/her relationship with administrative personnel	31%	67%	2%	0%
3. His/her knowledge of subjects taught	55%	38%	7%	0%
4. His/her ability to relate to fellow teachers	51%	45%	2%	2%
5. His/her preparation and organization of teaching materials and lessons	60%	33%	5%	2%
6. His/her class control	53%	40%	2%	5%
Percent of all ratings	52%	42%	4%	2%

The ratings given by principals were very high. Overall the ratings were virtually all in the "good to excellent" range, with a majority of teachers rated as "excellent" on all dimensions but one, "his/her relationship with administrative personnel." Principals rated teachers as "good" on this measure. Overall, 252 ratings were made (42 teachers x 6 response over six scales). Of these ratings 94% were good or excellent, compared with only 4.0% fair or poor.

Thirty of the ratings dealt with teachers in the summer institutes. Twelve have traditional degrees. If teachers are rated 1, good-2, fair-3, poor-4, the mean rating the 18 institute-trained teachers received was 1.7, which is slightly better than "good." The twelve teachers who had received traditional training were rated 1.3, which is not a bit lower than "excellent."[2]

Parents' Questionnaire

Table 12.2 shows the responses made by the parents of pupils enrolled in the program. Two hundred fifty-six, or about one-third of all parents, responded to the questionnaire. Some responses were received from parents of each school participating in the program except one, Benjamin Franklin High School, of the ARRIBA program.

The first cluster of three items was designed to gain insight into the linguistic preferences of pupils being served by the program. They confirmed the expectations of the project staff. In the Model A program about half the children (54%) were reported as coming from Spanish-dominant or from bilingual households. The remainder came from English-speaking backgrounds. In Model B and the ARRIBA programs virtually all pupils came from households where Spanish was used. Comparing the responses of question 1, which asked parents to indicate the language they used in conversing with their children, with those of question 2 which asked the language the children used to speak to their parents and to others in the family, is instructive.

At the Model A site the percent of "sometimes in Spanish" responses goes up, and both "always in Spanish and "never in Spanish go down. This suggests that both the Anglo and Latino parents were reporting that their children used their second language in the home more than the parents did. While this result was anticipated for Latino pupils, it was not clear that children of English-speaking parents would observe their children using Spanish in the home.

In the Model B program, where virtually all pupils came from Spanish-dominant homes, this effect was not observed. About the same percent of parents and pupils used Spanish.

In the ARRIBA program, virtually all parents reported that they were exclusively Spanish speaking, but, as with the Latinos in Model A, more pupils than parents were described as using both Spanish and English.

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[2] No statistical test of significance was made because of a few of the principals made most of the ratings of the teachers with traditional training.

Questions 4 through 7 were designed to see whether the parents clearly understood that the bilingual programs teach Spanish and English to all pupils involved. The results showed that most parents (81% or more of those in each program) felt that their child was learning English and Spanish, liked the fact, and wanted their children to continue. Some cause for concern, however, was the fact that 17% of the parents of Model A pupils said that their children were not mastering these languages or whether they did not know their children were being exposed to work in them.

The last three questions (Part II) asked parents whether they had participated in any parent-oriented activities, visiting the pupils' teachers and attending meetings. Results show that level of participation was dependent upon the grade levels at which their children were enrolled. At the elementary levels (Model A, B, and bilingual ARRIBA) half or more of the parents who returned the questionnaires reported that they had attended a meeting, had visited a Spanish-speaking teacher or visited an English-speaking teacher. Results from the junior and senior high-school levels showed that between 36% and 58% of the parents had attended each kind of activity at these two levels.

The last questionnaire item asked parents to comment. Overall, results showed some interesting trends. First, all comments expressed approval or suggested modifications. No one expressed total disapproval or asked for withdrawal of a child from the program. English-dominant parents (those who chose to answer the questionnaire in English) tended to make relatively few responses. Of 138 such parents (mainly of Model A pupils) only 34, or 24.6% commented. Half of these comments (17) expressed full agreement, often citing the need of children in the neighborhood to communicate with each other. Nine parents suggested that Spanish courses be initiated for the parents of the children in the evenings. Some indicated this would be helpful because the pupils practiced at home. A few parents indicated concern that their children's English needed more attention, and that Spanish was an extra which was not necessary. One mother indicated that her child was leaving the program in the coming year, but did not indicate a reason.

In contrast to English-speaking parents, Spanish-speaking parents were much more likely to comment. One hundred ninety-nine of 314 respondents (63.4%) answered the open-ended question. Of those who answered it, the great majority (81.4%) wrote comments praising or expressing full agreement with the program. Twenty-five (12.6%) of those answering the question felt that their child was not learning enough English. Most of the remaining respondents asked for more Spanish-speaking teachers (mainly at Kensington High School) for minor subjects such as physical education. One parent asked for a greater parent role in working with teachers and pupils.

Pupil Questionnaire

The results of the survey of ARRIBA are shown in Table 12.3. Results are fairly similar for all levels of the program; roughly half the pupils rated the ARRIBA program as "good" or "excellent" about 10 percent

Table12.2[a] Parents' Reactions to the Model School and ARRIBA Programs as Measured by the Spring, 1971 Questionnaire

Question	Model A		Model B		ARRIBA					
					Elem.		Jr. H.		Sr. H.	
	N Total=248		N Total=33		N Total=23		N Total=82		N Total=66	
Language Usage	N	%	N	%	N	%	N	%	N	%
1. At home I speak to my child										
Always in Spanish	92	37	22	67	23	100	76	93	60	91
Sometimes in Spanish	42	17	8	24	0	0	4	5	6	9
Never in Spanish	111	45	3	9	0	0	0	0	0	0
No answer	3	1	0	0	0	0	2	2	0	0
2. At home my child speaks to me										
Always in Spanish	73	29	23	70	22	96	76	93	58	88
Sometimes in Spanish	97	39	8	24	1	4	5	6	6	12
Never in Spanish	72	29	2	6	0	0	0	1	1	0
No answer	6	3	0	0	0	0	1	1	1	2
3. At home my child speaks to others in the family										
Always in Spanish	61	25	21	64	19	82	70	85	44	67
Sometimes in Spanish	104	42	9	27	4	17	8	10	23	35
Never in Spanish	79	31	3	9	0	0	2	2	1	1
No answer	5	2	0	0	0	0	2	2	0	0
Perceptions of School Program										
4. Is your child learning English in school?										
Yes	203	81	32	97	21	91	72	88	61	94
No	41	17	0	0	0	0	7	9	1	2
No answer										
5. Is your child learning Spanish in school?										
Yes	211	85	31	94	22	96	77	94	64	97
No	29	12	2	6	1	4	3	4	2	3
No answer	8	3	0	0	0	0	2	2	0	0
6. Does your child like learning in Spanish and English?										
Yes	226	91	31	94	22	96	79	96	66	100
No	12	5	1	3	0	0	3	4	0	0
No answer	10	4	1	3	1	4	0	0	0	0

Table 12.2[b] Parents' Reactions to the Model School and ARRIBA Programs as Measured by the Spring, 1971 Questionnaire (cont.)

Question	Model A		Model B		ARRIBA					
					Elem.		Jr. H.		Sr. H.	
	N Total=248		N Total=33		N Total=23		N Total=82		N Total=66	
Perceptions of School Program	N	%	N	%	N	%	N	%	N	%
7. Do you like your child to be learning Spanish and English										
Yes	235	91	31	94	22	96	79	96	66	100
No	12	5	1	3	0	0	3	4	0	0
No answer	11	4	1	3	1	4	0	0	0	0
8. Do you want your child to continue to study two languages next year?										
Yes	210	85	30	91	20	87	70	85	30	45
No	21	8	1	3	2	9	4	5	2	3
No answer	17	7	2	6	1	4	8	10	34	52
Parent Participation										
9. Have you visited your child's English-Speaking teacher?										
Yes	141	57	20	61	20	87	52	63	39	59
No	96	39	12	36	3	13	29	35	24	36
No answer	11	4	1	3	0	0	1	1	3	5
10. Have you visited your child's Spanish-speaking teacher this year?										
Yes	147	59	21	64	18	78	52	63	26	39
No	89	36	8	24	4	17	28	34	40	61
No answer	12	5	4	12	1	4	0	0	0	0
11. Have you attended a meeting about your child's school program?										
Yes	122	49	23	70	18	78	37	48	37	56
No	112	45	9	27	1	4	43	52	29	44
No answer	14	6	1	3	4	18	0	0	0	0

rated it "fair", and two [illegible] the remainder did not answer the question. A [illegible] said they would recommend it to friends who were [illegible] quarter, another quarter would recommend it to friends who were [illegible] English, and less than five percent of the parents in each school stated that they would not recommend the program. [illegible] of them would like to continue in the [illegible] results at the different grade levels. Two thirds of the [illegible] stated they would like to take all courses in English, [illegible] like to take some, and a few (4%) would like to take [illegible]. At the junior high school level nearly [illegible] would like to take all Spanish courses that were [illegible] level, 57% of the pupils indicated interest in a [illegible] interested in a mixed program, but only one [illegible] to be in an all-English program. There was also a [illegible] pupils' satisfaction with the amount of English [illegible]. At the elementary and junior-high levels, most pupils [illegible] were satisfied. At the high-school level, [illegible] dissatisfaction.

The questionnaire [illegible] pupils to make any comments they wished. Of the [illegible] questionnaires, 129 or 49% made comments. Thirty-three [illegible] comments indicated approval of the program as it stood, 49 or 18% of the comments suggested improvements, and 25 or 19% indicated other reactions. Seventy-five percent of the comments mentioned the need for better classroom space, more books in Spanish and more Spanish-speaking teachers in the schools. At one school, Kensington High School, nearly half [illegible] voiced that the English as a Second Language course was too [illegible] the level of the pupils.

Discussion

The findings of two of the [illegible] must be approached with caution: the number of respondents who filled out the Pupil Questionnaire was not as large as had been anticipated, with about half as many returned as expected. Moreover, pupils seemed to [illegible] completing some items. Parents who responded were, of course, [illegible] group who may have exerted some caution in criticizing the program because the questionnaires were not anonymous.

Within there limitations, the results show that all parents, principals, and pupils who responded to the questionnaire sent to them felt that the bilingual program was worthwhile. Both parents and a majority of the principals felt that program expansion was desirable, with principals indicating that additional institute teachers would be desired.

The three participants groups surveyed emphasized different aspects of program operation in their comments. The one major area of current operation which needed improvement from the point of view of the principals was the supervision received by the teachers, an area which some principals also felt needed attention during the first year of project operation. From the point of view of the pupils, there seemed to be two areas where

Table 12.1 Percent of pupils responding to each question on the ARSHA questionnaire*

	Percent of pupils choosing alternative		
	Elementary Schools	Middle Schools	Senior High Schools
1. How do you evaluate the bilingual program in which you are participating?			
Excellent	57	51	44
Good	27	37	49
Fair	11	11	7
Poor	4	1	0
2. Would you recommend taking courses in this program -			
To your friends who speak mainly Spanish	57	58	48
To your friends who speak both Spanish and English	37	36	47
To no one	4	7	1
3. Would you like to continue taking courses in the ARSHA program in Spanish next year?			
___I would prefer taking all	47	74	57
___I would prefer taking some	46	32	40
___I would prefer all in English	3	14	10
4. Are you satisfied with the amount of English you have learned this year?			
___Yes	96	98	94
___No, please explain	3	2	39

* Percents on items do not always add to 100 because of omissions. On item 2, pupils were permitted to choose more than one alternative, but virtually all pupils chose one. On question 3, it was intended that the pupils choose one alternative, but many chose two, sum of percents is therefore over 100.

was needed. At some sites, space was a major problem. At one high school, the English as a second language program was selected for criticism. Among the parent responses it was interesting that a number of Model A Anglo parents expressed an interest in learning Spanish in the evening. Such a course might be desirable supplement for the program. The questionnaire suggests that at least some parents were not clear about the pupils' amount of exposure to their first and second languages.

Parents also expressed concern about English mastery, especially in the ARSIth program. It was encouraging to note that virtually all parent comments were made with the intention of improving the ongoing program, with virtually no attempt to question the basic philosophy. It was also noteworthy that despite their generally mixed comment that Spanish-speaking parents do not come to the schools, a majority of the responding parents have reported speaking to their child's teacher, and coming to meetings at the schools.

Overall, the results seem to indicate that, from the respondents' viewpoints, the program was operating satisfactorily, the questions raised being remediable with the context of the existing program plan.

Appendix 12.1

Principal's Evaluation Form

EVALUATION FORM

TO BE COMPLETED BY PRINCIPALS OF SCHOOLS WITH TITLE VII BILINGUAL PROGRAMS

In answering the following questions, please focus on the Title VII Bilingual Education program in your school. The teachers whose classes are a part of the programs in your school are:

_____

_____

_____

I. Evaluation of the Program

1. How satisfied are you with the bilingual program operating in your school?

_____ Very satisfied
_____ Somewhat satisfied
_____ Somewhat dissatisfied
_____ Very dissatisfied

If you wish, comment on your response _____

_____

_____

2. If funds for this program are available for next year, which do you feel is appropriate for your school?

_____ Expand the program to reach more students
_____ Remain the same size as it is this year
_____ Be reduced in size
_____ Be eliminated from your school

If you wish, comment on your answer _____

_____

_____

3. If, on Question 2 you said that you would like the program to expand, do you think that more Spanish-speaking teachers with background and training similar to that of teachers from the 1969 and 1970 summer institute would be helpful?

_____ Yes
_____ No

If you wish, comment on your answer _____

_____

_____

4. How would you rate the special supervision received by the teachers at your school?

_____ Excellent
_____ Good
_____ Fair
_____ Poor

If you wish, comment on your answer _____

_____

_____

5. If a summer institute like that held last year is repeated, can you suggest any areas that should be emphasized more this year than last.

_____ No

_____ Yes (please list the areas) _____

_____

_____

6. (For principals whose schools had bilingual programs last year)

Is there increased knowledge regarding the goals of the program this year compared to last year on the part of

. Parents of students? _____ yes _____ no

. Students in the program? _____ yes _____ no

. Faculty in your school? _____ yes _____ no

Please comment on your answer _____

_____

_____

7. Please note any other factors about the bilingual program in your school which should be brought to the project director's attention at this time.

_____

_____

_____

_____

II. Evaluation of Teachers

Please give your impression of each teacher on the following scales. Rate them according to the following scale:
E= Excellent, G= Good, F= Fair, P= Poor

	TEACHERS' NAMES								
1. Rapport with students in his/her class.									
2. His/her relationship with administrative personnel									
3. His/her knowledge of the subjects taught									
4. His/her ability to relate to fellow teachers									
5. His/her preparation and organization of teaching materials and lessons									
6. His/her class control									

Appendix 12.2

Parent's Questionnaire (English Version)

PARENT'S QUESTIONAIRE - BILINGUAL PROGRAMS

Parent's Name _____

Child's Name _____

School _____

Class _____

1. At home, I speak to my child:

(Check One)

_____always in Spanish

_____sometimes in Spanish

_____never in Spanish

2. At home, my child speaks to me:

_____always in Spanish

_____sometimes in Spanish

_____never in Spanish

3. At home, my child speaks to others in the family:

_____always in Spanish

_____sometimes in Spanish

_____never in Spanish

4. Is your child learning English in school?

_____yes

_____no

5. Is your child learning Spanish in school?

_____yes

_____no

6. Does your child like learning Spanish and English in school?

_____yes

_____no

7. Do you like your child to be learning Spanish and English?

_____yes

_____no

8. Do you want your child to study two languages next year?

_____yes

_____no

9. Have you visited your child's Spanish-speaking teacher this year?

_____yes

_____no

10. Have you visited your child's English-speaking teacher this year?

_____yes

_____no

11. Have you ever attended a meeting about your child's school program?

_____yes

_____no

12. Please write down any problems with the program you wish us to know.

_____

_____

_____

13. Please write down any good things you wish us to know.

_____

_____

_____

_____

Appendix 3

Pupil Questionnaire (English Version)

THE SCHOOL DISTRICT OF PHILADELPHIA

Office of Foreign Languages
Office of Research and Evaluation

PUPIL QUESTIONAIRE - ARRIBA PROGRAM

1. How would you rate the Arriba bilingual program in which you are participating? (Check one)

___ excellent ___ good ___ fair ___ poor

2. Would you recommend taking courses in this program? (Check as many as apply)

_____ to your friends who mainly speak Spanish.
_____ to your friends who speak both Spanish and English.
_____ to no-one.

3. Would you like to continue taking courses in the Arriba program in Spanish next year?

_____ I would like to take all courses in the Arriba program (Spanish language courses and English as a Second Language.)

_____ I would like to take some courses in the Arriba program. (Check those you would like to take):

_____ Spanish as a First Language
_____ English as a Second Language
_____ Mathematics (or Algebra) in Spanish
_____ General Science, Chemistry or Biology(in Spanish)
_____ Social Studies (Puerto Rican History; American History) in Spanish

_____ I would prefer to take all courses in English next year.

4. Are you satisfied with the amount of English you have learned this year?

_____Yes.

_____No. Please explain.

_____

5. Please write any comments about the bilingual Arriba program which you think we should know in order to plan the program in the future.

_____

_____

STUDY 13. VALIDATION OF THE SPEAKING TESTS AS MEASURES OF FIRST-GRADE LATINO PUPILS' READINESS TO READ IN ENGLISH

At one Model B school, McKinley, the principal felt there were some children who, though they were of Spanish background, were ready to learn with the major part of the instruction in English. For this purpose, data were collected through testing the children on the English and Spanish-speaking tests developed last year, and through collection of the teachers' estimates of pupils readiness for reading English. The collection of these data provided an opportunity to: (a) validate the speaking tests against teacher estimates of pupil performance, and (b) provide some data regarding the distribution of English and Spanish skills in the McKinley School first grade.

Method

Instrument and Procedure

The speaking tests in English and Spanish, developed for evaluating the bilingual prekindergarten, kindergarten and first-grade programs, were administered to students in the first-grade. All 34 Latino students in school when the testing took place were examined. The instructions and items were read by a team of teachers and program supervisors, who rated the students' responses while the test was in progress. Each student was tested in his mother tongue, and in the other language. The testing took place in November and December.

Teachers' ratings of the English Reading Readiness of Pupils were available for 21 Latino students. They were used to validate the speaking tests as measures of English Readiness.

Analysis

Pierson's product correlation coefficients were computed to show the relationships between test performance and teacher ratings. Data was also arranged in an expectancy table.

Results

Test Validation

Each speaking test consisted of three parts - pronunciation, questions, and free response. Two different combinations of test parts seemed to have potential for predicting the teachers' ratings of Latino students' readiness for reading English; the pooled scores on the second and third parts of the English speaking test (questions and free response) and the difference between the scores earned on these two parts of the tests in English and in Spanish.

In the validation study on 21 Latino pupils, it was found that

the English score and the English-Spanish difference score for the questions and picture test parts were equally useful in predicting the teachers' observations. The "difference" scores correlated 0.66 (df=19, $p<.01$) with the teacher ratings, the "English only" composite score correlated 0.60 (df=19, $p<.01$). A test of significant differences in correlation coefficients indicated that the difference between the two correlations was probably a chance phenomenon.

Because it was easier to work with, an expectancy table was derived for the English questions and free-response total scores showing how they related to teachers' ratings. It is shown in Figure 1.

Figure 13.1
Expectancy Table

Teacher Rating of Latino Students' Readiness for Reading English	Part 2 and 3 Total, English Speaking Test Score 0-8		9-19		20-25	
	N	%	N	%	N	%
1. Not Ready	6	66	1	20	0	0
2. Almost Ready	1	11	4	80	2	29
3. Ready	2	23	0	0	5	71
Total	9	100	5	100	7	100

This expectancy table results in 15 of 21 or 71% of the students being placed correctly (i.e., the test and the teachers agree) and for all but two cases, the test and the teachers agree within one category.

Placement of Students

This expectancy table could now be used to discover which pupils, among Latinos in all the first-grade classes, would be described as "ready to read English," "almost ready to read English" and "not ready to read English" by the teachers. This was done by seeing how many students fell in each of the three ranges of scores on the English questions and free response subtests. These findings are shown in Table 13.2.

Some students' scores on the table are followed by asterisks. Those in the "almost ready to read English" category whose names were followed by a single asterisk, scored higher in English than in Spanish, even though their English score led them to be classified with the "almost ready" group. Those in the "ready to read" group whose names are followed by two asterisks, scored at least as high in Spanish as they did in English.

It should be noted that almost all students in the "ready to read English" categories also did well on the Spanish test, and were therefore probably true bilinguals who could function well in both languages. If a policy decision is made in which the program separates students by the categories used in this research, care should be taken that the Spanish lessons these pupils are exposed to are not too simple (i.e., they should be treated differently from Anglos).

Table 13.2

Latino Pupil's Scores on Questions and Free Response Parts of the Speaking Tests

I. Pupils in the "Not Ready To Read English" Range

Name	English Score	Spanish Score
R. E.	0	18
A. M.	2	17
M. N.	3	17
P. J.	4	22
S. E.	5	15
M. D.	6	14
M. M.	7	10
V. R.	7	23
C. N.	7	10

Number "Not Ready" = 9. (26%)

II. Pupils in the "Almost Ready to Read English" Range

Name	English Score	Spanish Score
A. R.	9	20
C. N.	10	18
A. M.	12	10*
A. E.	13	12*
R. M.	14	25
P. J.	15	20
R. C.	15	25
R. W.	15	20
M. Y.	17	23
G. A.	17	14*
L. A.	18	21
M. V.	18	1*
P. P.	18	14*
V. N.	19	19*

Number "Almost Ready" = 14. (41%)

III. Pupils in the "Ready to Read English Category"

Name	English Score	Spanish Score
G. A.	20	11
T. E.	20	18
R. M.	20	25**
S. Z.	20	17
S. A.	21	22**
M. E.	21	20
S. H.	22	22**
M. J.	22	2
R. N.	23	22
S. G.	24	22
C. G.	25	22

Number "Ready = 11. (32%)

Table 13.2 (Cont'd.)

*Pupils whose English performance placed them in the "almost ready to read" categories, whose performances in English was, never the less equal to or superior to their performances in Spanish.

**Pupils whose English performance placed them in the "ready to read category, but whose Spanish performance was equal or superior to their English performance.

Conclusion

The testing of Spanish-speaking children in the McKinley School first grade suggested that: (1) Scores on the English-speaking Tests, parts II and III and the difference between scores earned on parts II and III of the English and Spanish-speaking tests were both good predictors of the teachers' estimates of whether a student was ready to begin to learn to read in English. Using the English test scores, an expectancy table was prepared, and then applied to other Latino students. This yielded an estimate of the correct placement of each child. According to the estimates, 26% of the Latinos fell in the "not ready to read English" category, 41% were in the "almost ready" category and 32% were in the "ready to read English category."

Program

In the Model School first grade program, students were taught by teams of native speakers of English and Spanish. Most instruction was in the students' mother tongue, with oral work in English as a Second Language and Spanish as a Second Language included. About two months after the beginning of the operation of the Model School program, formal study of reading using the prescribed readers was begun in all classes. The books in use were the Bank Street Reading Series (Up the City, People Read) in the English language for the Anglos, and the Laidlaw Reading Series (Camino de la Escuela, Aprendemos a Leer) in the Spanish language for the Latinos. According to the program supervisors, before the readers were introduced, preparatory activities such as matching and identifying letters and using experience charts occurred in all classes.

Evaluation

Instrument. In order to provide the test directly in the vocabulary used in the text, two special instruments, one in English and one in Spanish, were prepared which consisted of words in the pre-primer and primer texts used in the program. (Both were shown in the 1970 report.) As the vocabulary included in these texts was quite large, all pre-primer words and a sampling of about 1/5 of the vocabulary in the primer texts were included in the tests. To make the tests more compact, words were grouped into phrases and short sentences. However, the scoring was word by word, so that the percentage of students recognizing each word could be easily calculated. The tests were written in manuscript by hand on ditto masters and reproduced. All vocabulary that appeared in the tests appeared in the readers used in the program. The Spanish test was two words longer than the English test.

Procedure. During the first week of June (of the first operating year of the Model School) every student in the program was tested individually in his mother tongue by one of the program supervisors (the one who was a native speaker of the appropriate language). The student was presented with a copy of the test and was asked to read aloud the words, phrases, and

Figure 14.1 Interaction between time of testing and language group.

Table 14.1 MEAN [illegible] ON THE [illegible] TEST IN THE STUDENTS' [illegible] BEFORE AND AFTER SPRING VACATION

Language Group		Pre-Vacation	Post-Vacation	Pre-Post Combined
Anglo N=41	Mean Number Correct		27.7	28.7
	% Correct	[illegible]	69.2	62.4
Latino N=41	Mean Number Correct	[illegible]	22.4	27.7
	% Correct	[illegible]	47.6	58.2
Combined Language Groups	% Correct	[illegible]	53.9	60.3

Analysis of Variance

Variables	SS	df	F	P
Between Subjects				
Language Group	[illegible]	1	.09	NS
Subjects within groups	5311.7	80		
Within Subjects				
Pre-Post Vacation (P-PV)	[illegible]	1	50.7	$p<.01$
P-PV X Language Groups	[illegible]	1	23.8	$p<.01$
P-PV X Subjects Within Groups	[illegible]	80		

restless after a long [illegible] first factor would [illegible] second would tend to [illegible] approximation of the [illegible]

The finding that [illegible] skills as measured by [illegible] anticipated. Teachers [illegible] school year in which [illegible] they are out of practice [illegible] and because forgetting [illegible] summer. These types of [illegible] year (Stake, 1971) and [illegible] except to reinforce the [illegible] beginning of the school year [illegible]

The finding that [illegible] sight vocabulary of English [illegible] explanation. There [illegible] results. The [illegible] material during the [illegible] procedures used.) Different opportunities to practice reading over the summer hiatus could cause it. Some [illegible] either of these explanations is [illegible] program design and management.

Bank Street College of [illegible]
New York, [illegible]

Carillio, L. W. and [illegible]

Kelley, T. [illegible]
New York, [illegible]

Ofenberg, R. [illegible]
Philadelphia, [illegible]

Pastore, [illegible]

School District of Philadelphia, [illegible]
Years. Philadelphia, [illegible]
_____ [illegible]
School District of
_____ [illegible]
1971-1972. Philadelphia, [illegible]

Stake, E. Testing hazards in [illegible]

Sullivan Associates, [illegible]
Webster Division, [illegible]

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